Genus BOSTRYCHUS Lacepède

Bostrychus LACEPÈDE, Hist. Nat. Poiss., vol. 3, p. 140, 1802. (Type Bostrychus sinensis LACEPÈDE, designated by JORDAN and EVERMANN, Genera of Fishes, pt. 1, p. 61, 1917.) (Bostrichus GEOFFROY, 1762 in insects not involved.)

Bostrichthys DUMÈRIL, Zool. Analyt., pp. 120, 332, 1806. (Type Bostrychus sinensis LACEPÈDE, virtually.

Bostrichthys DUMÈRIL proposed to replace Bostrychus LACEPÈDE.)

Psilus FISCHER, Zoognosia Tab. Synop., ed. 3, vol. 1, p. 74, 1813. (Type Bostrychus sinensis LACEPÈDE, virtually.

Psilus FISCHER proposed to replace Bostrychus LACEPÈDE.)

Bostrictis RAFINESQUE, Analyse de la nature, p. 84, 1815. (Type Bostrychus sinensis LACEPÈDE, virtually.

Bostrictis RAFINESQUE proposed to replace Bostrychus LACEPÈDE.)

Ictiopogon RAFINESQUE, op. cit., p. 92. (Type Bostrychus sinensis LACEPÈDE, virtually. Ictiopogon RAFINESQUE proposed to replace Bostrychus LACEPÈDE.)

Body elongate, depressed in front and tail well compressed, especially posteriorly. Head rather large, broad. Snout short, broad, depressed. Eye small, advanced to first fourth of head. Mouth large, well inclined, extends below and behind eye. Teeth very small, in villiform bands in jaws and on vomer. Front nostril in short tube. Interorbital broad. Gill opening rather large. Air bladder large. Intestine with single circumvolution. Scales fine, very small, narrowly imbricate and cycloid. Head, breast and chest largely scaly. Vertebrae 27, of which 15 caudal. Two dorsals, well separated, first of 6 spines, second opposite anal and slightly longer. Caudal rather long. Paired fins moderate, ventrals well separated, with spine and 5 rays.

A well defined genus, with very small scales and known by the large conspicuous ocellus at the bases of the upper daudal rays.

Analysis of Species

1
a. D. VI - I, 10 to 12; eye 5¾ to 6 1/3; no dark transverse bands.

1
b. Coloration largely uniform. sinensis.

2
b. Two conspicuous, inclined backward dark stripes on side of head. striogenys.

2
a. D. IX or X - I, 17 or 18; eye 8¼; 8 or 9 broad transverse dark bands. zonatus.

Bostrychus sinensis Lacepède

Bostrychus sinensis LACEPÈDE, Hist. Nat. Poiss., vol. 3, pp. 140, 141, 1802 (type locality, China); vol. 2, pl. 14, fig. 2, 1800. - BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 16, 1877 (Java; Bintang; Singapore); Verh. Kan. Akad. Wet. Amsterdam, No. 5, vol. 18, p. 2, 1879 (Shanghai). - RUTTER, Proc. Acad. Nat. Sci. Phila., p. 74, 1897 (Swatow).- JORDAN and SEALE, Proc. U.S. Nat. Mus., vol. 29, p. 526, 1905 (Shanghai); Bull. Bur. Fisher., vol. 25, p. 282, 1906 ( ). - JORDAN and RICHARDSON, Philippine Journ. Sci., p. 45, 1910 (reference).- SEALE, Philippine Journ. Sci., vol. 9, p. 74, 1914 (Hong Kong). - JORDAN and TANAKA, vol. , No. , p. 272, 1927 (Miyara River, Okinawa). - REEVES, Journ. Pan-Pac. Res. Inst., vol. 2, No. 3, p. 13, July-Sep. 1927 (reference). - FOWLER, H.K.N., vol. 2, No. 4, p. 309, Nov. 1931 (Hong Kong).

Gobius sinensis VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (71) 94, 1837 (on LACEPEDE).

Philypnus sinensis RICHARDSON, Voy. Sulphur, Ichth., p. 149, 1845 (correction); Ichth. China and Japan, p. 210, 1846 (Canton). - SAUVAGE, Bull. Soc. Philom. Paris, ser. 7, vol. 5, p. 106, 1881 (Swatow).

Bostrichthys sinensis GILL, Proc. Acad. Nat. Sci. Philadelphia, p. 125, 1860 (reference). - KNER, Reise Novara, Fische, p. 187, 1865 (Java; Manila). - BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 58, 1865 (Amoy); vol. 4, p. 128, 1873 (1874) (Amoy). - SAUVAGE and DE THIERSANT, Ann. Sci. Nat., ser. 6, vol. 1, Zool., art. 5, p. 3, 1874 (China). - DAY, Fishes of India, pt. 3, p. 309, pl. 65, fig. 4, 1877 (Andamans); Fauna of Brit. India, vol. 2, p. 287, fig. 97, 1889. - OSHIMA, Annot. Zool. Japan., vol. 2, No. 1, p. 21, Feb. 1, 1926 (Haiho, Hainan). - HERRE, Gobies of Philippines, p. 43, pl. 3,

fig. 3, 1927 (Coron; Siasi; Cebu; Hong Kong; Amoy; Samoa). - FOWLER, Mem. Bishop Mus., vol. 10, p. 388, 1928 (New Guinea). - CHU, Biol. Bull. St. John's Univ. No. 1, p. 157, Jan. 1931 (reference). - HERRE and MYERS, Lingnan Sci. Journ., vol. 10, Nos. 2-3, p. 253, Aug. 1931 (Hong Kong). - FOWLER, Mem. Bishop Mus., vol. 11, No. 5, p. 360, 1931 (reference); vol. 11, No. 6, p. 441, 1934 (reference). - TOMIYAMA, Jap. Journ. Zool., vol. 7, No. 1, p. 43, 1936 (Hainan; Shanghai). - SUVATTI, Index Fish. Siam, p. 149, 1936 (upper Bangpakong River). - ROXAS and MARTIN, Depart. Agric. Comm. Manila, Tech. Bull. 6, p. 29, 1937 (reference). - FOWLER, ~~Cat.~~ List (Malaya Fishes), p. 208, 1938 (Singapore).

Eleotris sinensis GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 127, 1861 (China; Hong Kong; fresh water Oualan). - SCHMELTZ, Cat. Mus. Godeffroy, No. 4, p. 19, 1869 (Kanathia). - GÜNTHER, Ann. Mag. Nat. Hist. London, ser. 4, vol. 12, p. 242, 1873 (Shanghai); Journ. Mus. Godeffroy, vol. 6, pt. 11, p. 189, 1877 (Ovalau and Kanathia, Fiji). - SCHMELTZ, op. cit., No. 7, p. 47, 1879 (Kanathia). - GÜNTHER, Rep. Voy. Challenger, vol. 1, pt. 6, p. 55 (Hong Kong). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Canton; Siminju, Borneo). - PÖHL, Cat. Mus. Godeffroy, No. 9, p. 33, 1884 (Kanathia). - ELERA, Cat. Fauna Filipinas, vol. 1, p. 524, 1895 (Luzon; Cavite; Santa Cruz).

Eleotris (Philypnus) sinensis PETERS, Monatsb. Akad. Wiss. Berlin, p. 922, 1880 (Ningpo).

Eleotris (Bostrychus) sinensis RENDAHL, Arkiv. for Zool., Stockholm, vol. 16, No. 2, p. 11, 1924 (Canton; Hong Kong).

Philypnus ocellicauda RICHARDSON, Voy. Sulphur, Fishes, p. 59, 1844 (type locality, "The Bocca Tigris"). - BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 32, 1861 (Singapore).

Philypnus sinensis ocellicauda RICHARDSON, op. cit., pl. 56, figs. 15-16.

Philypnus ophicephalus BLEEKER, Verh. Batavia, Genoot. (Blenn, Gobioid.), vol. 22, p. 20, 1849 (type locality, Surabaya); (Madura), vol. 22, p. 5, 1849 (Madura); (Mid-Oost-Java), vol. 23, p. 9, 1850.

Depth 5½ to 6; head 3 2/5 to 3½, width 1½ to 1¾. Snout 3 7/8 to 4 in head from snout tip; eye 5¾ to 6 1/3, 1 2/3 to 2 in snout, 1 7/8 to 2 in interorbital; maxillary reaches opposite hind eye edge or little beyond, length 2 to 2 1/8 in head from snout tip; teeth finely villiform, in broad bands in jaws, and broadly villiform band on vomer, none on palatines; interorbital 3 to 3 1/6, low, depressed, only very slightly convex; preopercular spine not exposed, short. Gill rakers 4 + 12, short points, ½ of gill filaments, which equal eye.

Scales 110 to 120 + 7 to 10 in lateral line; 28 to 30 transversely above anal origin; 50 to 55 predorsal forward to upper lip; head largely covered with fine scales, lips and branchiostegal region naked; pectoral and caudal bases scaly, other fins naked. Scales with 40 + 40 evenly radiated striae; circuli fine.

Dorsal VI - I, 10, i to I, 12, i, third spine 3 to 3½ in total head length, seventh ray 2 1/5 to 2¼; Anal I, 9, i, seventh ray 2 1/8 to 2 1/3; caudal 1 1/5 to 1 2/5; least depth of caudal peduncle 2 to 2½; pectoral 1½ to 1¾, rays i, 15; ventral rays i,5, fin 1 7/8 to 2 1/8 in total head length. Anal papilla rounded flap large as large.

Largely uniform brown, little paler on under surface of head and belly. More or less obscurely marbled darker, markings fading in alcohol. Round black white edged ocellus, its dark area large as eye, at bases of upper caudal rays. Iris gray. Fins brown. Soft dorsal with 4 to 6 darker blotches, forming bars on each membrane. Caudal with as many dark transverse similar bands. Other fins uniformly brownish.

East Indies, Malaya, Siam, Philippines, China, Micronesia, Polynesia.

6470. Cebu market. August 13, 1909. Length 100 mm.

U.S. N.M., No. 7839, Hong Kong. William Stimpson. Length 137 mm.

U.S.N.M., No. 30643. New Guinea. Australian Museum. Length 161 mm.

U.S.N.M., No. 56411. Shanghai. P.L. Jouy. Length 144 mm.

U.S.N.M., No. 85907. China. A. de C. Sowerby. Length 137 to

D. VI - 12. A. 10.

U.S.N.M., no. 86043. China. A. de C. Sowerby. Length 123 to 132 mm. Six examples.

U.S.N.M., no. 86959. Foochow, China. A. de C. Sowerby. Length 80 mm.

U.S.N.M., no. 90325. Thonburi, Bangkok, Siam. July 18, 1926. Dr. H.M. Smith. Length 91 to 154 mm. Six examples.

U.S.N.M., no. 90326. Siam. Dr. H.M. Smith. Length 92 to 95 mm. Two examples.

U.S.N.M., no. 90327. Siam. Dr. H.M. Smith. Length 135 mm.

Bostrychus striogenys Nichols

Bostrychus striogenys NICHOLS, Amer. Mus. Novit., No. 922, p. 1, fig. 1, May 4, 1937 (type locality, Upper Fly River, Papua, W.D., 5 miles below Palmer Junction).

Depth 5 4/5 to 7; head 3 2/5 to 3 7/10, width 1 2/5. Snout 3 4/5 in head; eye 5 to 8, 2 1/5 in snout; maxillary reaches little beyond eye, length 2 1/5 in head; jaws equal, mouth only slightly oblique; teeth in broad bands in jaws, and in broad triangle on vomer with corners produced somewhat backward; front nostril in tube, remote from posterior and adjacent to upper jaw; interorbital 2 4/5 to 2 9/10 in head, broad, slightly concave. Gill membranes meet under middle of and joined within to isthmus under hind end of preopercle.

Scales 120 to 130 in lateral series. Scales smooth, irregular, small and imbedded on breast and head.

Dorsal VI - 12 to 14, third spine 4 2/5 in head, second branched ray 2 3/5; Anal 10 or 11, first branched ray 4, last ray 3; caudal 1¼, acutely rounded behind; least depth of caudal peduncle 2 1/6; pectoral 2¼; ventral 2 1/8.

Dark above and on upper 2/3 of side, contrasted white below from breast to caudal peduncle, and on lower part of cheeks and opercles. Dark meeting white on sides in very irregular line, with an upward streak of white on one side of caudal peduncle, spot on other. Three dark stripes slant downward and backward across face, middle one from below eye, lowest from maxillary, upper 2 boldly contrasted against white background. Lower jaw to across branchiostegals gray. Fins dark. Ventral fins bordered pale and vertical fins with slight pale edges. Black area on upper caudal base bordered in front by pale semicircle to form imperfect ocellus, and pale mark on lower caudal base below. Caudal with 2 or 3 faint vertical rows of pale spots.

Length 45 to 162 mm. (Nichols.)

New Guinea. Apparently differs from Bostrychus sinensis chiefly in the 2 conspicuous dark stripes on the lower side of the head.

Bostrychus zonatus Weber

Bostrychus zonatus WEBER, Nova Guinea, vol. 5, pt. 2, p. 259, pl. 12, fig. 1, 1908 (type locality, Merauke, South New Guinea).

Bostrichthys zonatus FOWLER, Mem. Bishop Mus., vol. 10, p. 389, 1928 (compiled).

Depth 4¾; head 3 2/5. Snout 3 4/5 in head; eye 8¼, 2 in snout, 2 in interorbital; maxillary extends back little behind eye, length 2 in head; mouth little inclined, jaws equal; rows of small and larger teeth in jaws and semioval patch of conic teeth on vomer; interorbital rather low.

Scales 150 in lateral series; 35 transversely. Scales all cycloid, anteriorly and on head smallest.

Dorsal IX or X - I, 17 or 18, seventh spine 3 1/8 in head, first branched ray 2 7/8; Anal 13, first ray 2 3/7, twelfth ray 1 9/10; least depth of caudal peduncle 2½; caudal 1¼, convex behind; pectoral 1 4/7, rays 16; ventral fin 1 7/8.

In alcohol dark brown, reddish white below. Body with 8 or 9 broad nearly complete dark brown transverse bands; parallel, narrow dark brown streak within each pale interval. Upper part of caudal fin base with dark pale edged blotch. Vertical fins dark brown, with paler marbling and clouding, edges pale. Paired fins dark.

Length 110 to 150 mm. (Weber.)

New Guinea.

Genus Philypnus Valenciennes

Philypnus VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (192) 255, 1837. (Type Gobiomorus dormitator LACEPÈDE, monotypic.)

Lembus GUNTHER, Cat. Fish. Brit. Mus., vol. 1, p. 505, 1859. (Type Lembus maculatus GUNTHER, monotypic.)

Perccottus DYBOWSKI, Izv. Vib. Otd. Russk. Geog. Ob., 3 (Bull. Siberian Division Russian Geogr. Section 3), vol. 8, p. 28, 1877. (Type Perccottus glenii DYBOWSKI, monotypic.)

Micropercops FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 58,

p. 318, 1920. (Type Micropercops dabryi FOWLER and BEAN, orthotypic.)

Body elongate, tail but little longer than trunk. Head rather large, well compressed. Snout conic, broad. Eye large, elevated, but little in advance of middle in head length. Mouth inclined, lower jaw protruding. Maxillary not quite reaching opposite eye. Teeth small, in bands in jaws. Nostrils separated, front one near upper front preorbital edge and hind one close to upper eye edge. Interorbital low, depressed. Gill opening extends forward opposite eye center.

Head naked, except on occiput. First dorsal with 9 spines, and second dorsal with spine and 11 rays. Anal with spine and 7 rays. Caudal rounded behind. Pectoral rays 12, fin less than head. Ventral with spine and 5 rays, fins separated, shorter than pectoral.

Small Chinese gobies resembling Eviota, though the edges of the paired fins entire, not fringed, and the predorsal scaly.

Analysis of species

a.' Scales 40 or 41 in lateral series; 18 predorsal. cinctus

a.² Scales 33 to 37 in lateral series; 21 to 24 predorsal. glebnii

Philypnus cinctus Sauvage and de Thiersant

Philypnus cinctus SAUVAGE and DE THIERSANT, Ann. Sci. Nat., ser. 6, vol. 1, Zool., p. 3, 1874 (type locality, Kiang-si). - FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 58, No. 2338, p. 318, 1920 (reference).

Micropercops cinctus CHU, Biol. Bull. St. John's Univ., No. 1, p. 159, Jan. 1931 (reference).

Perccottus cinctus BERG, Poiss. Eaux Douces U.S.S.R., pt. 2, p. 648, 1933 (reference).

Micropercops dabryi FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 58, p. 318, fig. 2, 1920 (type locality, Soochow, China). - CHU, Biol. Bull. St. John's Univ., No. 1, p. 159, Jan. 1931 (reference).

Micropercops dabryi borealis NICHOLS, Amer. Mus. Novitates, No. 402, p. 3, fig. 2, Feb. 28, 1930 (type locality, Tsinan, Shantung).

Depth 4 2/5; head 3 1/8, width 1 4/5. Snout 3 2/5 in head from snout tip; eye 3 3/4, 1 1/10 in snout, slightly greater than interorbital; maxillary not quite reaching opposite front of eye, expansion 1/3 of eye, length 2 2/5 in head from snout tip; teeth small, simple, conic, in bands in jaws; interorbital 3 1/2, depressed, scarcely concave. Gill rakers 3--8, lanceolate, shorter than gill filaments, which equal eye.

Scales 39+2 in median lateral series; 10 transversely between soft dorsal and anal; 18 predorsal. Scales crowded on predorsal and breast, and largest on posterior regions of body. Head naked, except small scales on occiput which extend forward opposite hind pupil edge. Scaleswith 10 to 14 basal radiating striae; apical denticles 20 to 23; circuli coarse.

D. IX—I, 11, second spine 3 in total head length, first branched ray 2; A. I, 7, first branched ray 2 1/3; caudal 1 1/4, convex behind; least depth of caudal peduncle 2 7/8; pectoral 1 1/3; ventral 1 2/3. Anal papilla long as pupil.

Pale brownish, back and sides with 9 darker cross bands, represented by as many obscure brownish blotches on side of body axially, in which scale edges darker. Blackish blotch at suprascapula. Iris pale slaty. Dark streaks from below eye over cheek. Dusky blotch on opercle. Spinous dorsal dusky, otherwise fins all pale or dull gray brown. Dorsals with 5 dull longitudinal

dusky lines, and caudal with 6 obscure or slightly darker transverse lines.

China.

U.S.N.Mus., No. 83982. Soochow, China. Mr. N. Gist Gee. 1920.

Length 47 mm. Tpye.

Philypnus glenii (Dybowski)

Perccottus glenii DYBOWSKI, op. cit., (type locality, Уссури [= Amur]).

Perccottus glehni SOLDATOV and LINDBERG, Rev. Fish. Seas of Far East, vol. 5, p. 417, 1930 (Amur). - BERG, Poiss. Eaux Douces. U.R.S.S., pt. 2, p. 647, figs. 601 to 603, 1933.

Eleotris glehni HERZENSTEIN and VARPAKOVSKII, Trudui St. Petersb. Nat. vol. 18, p. 22, 1887/ (Amur).

Philypnus glehni TOMIYAMA, Jap. Journ. Zool., vol. 7, No. 1, p. 42, Oct. 25, 1936 (Ranan, Rahoku, Kyozyo, Syohei, Kankyohoku-do, Korea).

Eleotris pleskei HERZENSTEIN and VARPAKOVSKII, op. cit., p. 19, pl. 2, fig. 2, 1887 (type locality, River Lefu, Amur).

Eleotris dybowskii HERZENSTEIN and VARPAKOVSKII, op. cit., p. 21, 1887 (type locality, Between Palus and Chingan, Amur) (fat example).

U.S.N.M., no. 76738. Tientsin, China. A. de C. Sowerby. Length 130 mm.

U.S.N.M., no. 77008. Sungari River, at junction with the Amur. A. de C. Sowerby. Length 179 mm.

U.S.N.M., no. 105, 188. Khanka Lake, Kamchatka. May 9, 1928. A. Taranetz. Length 82 mm.

Genus BUTIS Bleeker

Butis BLEEKER, Nat. Tyds. Ned. Indië, vol. 11, p. 412, 1856.

(Type Cheilo-dipterus butis BUCHANAN-HAMILTON, tautotypic.)

Body elongate, robust, compressed. Head rather large, depressed. Snout long, depressed. Eye advanced, high. Mouth large, little inclined, mandible little protruded in front of snout tip. Teeth in band in each jaw, uniformly villiform or outer row little enlarged. Tongue spatulate, free in front. No barbels. Gill openings well advanced below, isthmus narrow. Front gill rakers on first arch about 6 on lower limb, robust. Psendobranchiae present. Exposed edge of shoulder girdle smooth. Scales large, angular, with 1 or more basal scalelets. Scales ctenoid, extend forward on predorsal to nostrils and cover sides of head. Naked mucigerous canals extend from snout, around each side of interorbital area, to shoulder and around preopercular border; defined by distinct osseous crests. Several open pores on preopercular border. Dorsal fins short, with 6 spines and 9 rays. Anal like second dorsal. Caudal narrowly rounded. Pectoral without free rays, narrowly rounded. Ventral with spine and 5 rays, fourth ray longest, fins widely separated.

Indo-Pacific.

Analysis of Species

a.' Interorbital and preopercle, inclusive of space below eyes fully scaled.

b.' Depth 6 to 8; head 3½ to 4.

c.' No scales between eye and orbital ridge; scales on trunk without auxiliary basal scales. amboinensis.

c.² Two or three rows of minute scales between eye and orbital ridge; scales on trunk with auxiliary basal scales. butis.

b.² Depth 5 to 6; head 3 2/5 to 3½; scales on trunk with auxiliary basal scales. melanostigma.

a.² Interorbital and preopercle scaleless; scales on trunk without auxiliary basal scales. gymnopomus.

Butis amboinensis (Bleeker)

Eleotris amboinensis BLEEKER, Nat. Tyds. Ned. Indie, vol. 5, p. (319) 343 (type locality, Rivers of Amboina); vol. 6, p. 458, 1854 (Amboina); Act. Soc. Sci. Ind, Neerl., No. 3, vol. 1, p. 5, 1856 (Manado, Celebes). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 117, 1861 (copied).- MARTENS, Preuss. Exped. Ost-Asien, vol. 1, p. 342, 1876 (Borneo; Amboina).- DAY, Fishes of India, pt. 2, p. 316, 1877. - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Selina; Sarawak). - DAY, Fauna Brit. India, vol. 2, Fishes, p. 297, 1889. - WEBER, Nova Guinea, vol. 5, pt. 2, p. 253, 1908 (Klipong R., North New Guinea); vol. 9, pt. 4, p. 598, 1913 (Mbai).

Butis amboinensis BLEEKER, Act. Soc. Sci. Ind. Neerl. (Celebes), vol. 8, p. 44, 1860 (Celebes); Ned. Tyds. Dierk., vol. 2, p. 150, 1865 (Bouro); vol. 2, p. 293, 1865 (Amboina); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 66, 1877 (Celebes; Buru; Amboina). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 276, 1908 (Mindoro); Philippine Journ. Sci., p. 46, 1910 (reference). - MCCULLOCH and OGILBY, Rec. Austral. Mus., vol. 13, p. 271, pl. 36, fig. 4, 1919 (Strickland R., Papua; Ugi, Solomons). - HERRE, — McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 170. July 7, 1925 (reference).

Gobies of Philippines, p. 46, 1927 (Luna; Santa Inez; Manila; Libog and Arimbay River; Baco River; Naganakan River; San Jose and Mariri River; Molo; Butuan; Placer). - Fowler, Mem. Bishop Mus., vol. 10, p. 394, 1928 (compiled). - HERRE, Journ. Pan-Pac. Res. Inst., vol. 6, No. 4, p. 9, Oct.-Dec. 1931 (Auki, Kulambangra and Ugi, Solomons, fresh water). - FOWLER, op. cit., vol. 11, No. 6, p. 441, 1934 (Ugi, Solomons; Strickland River; New Guinea). -ROXAS and MARTIN, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 220, 1937 (reference). - FOWLER, ~~Cat.~~ List (Malaya Fishes), p. 208, 1937 (Seletar).

Ophiocara amboinensis HORA, Mem. Asiat. Soc. Bengal, vol. 6, p. 492, 1924 (Tale Sap). - SUVATTI, Index Fish. Siam, p. 150, 1936 (reference).

Eleotris longicauda de Vis, Proc. Linn. Soc. New South Wales, vol. 9, p. , 1884 (type locality, Brisbane River, Queensland).

20205. Alimango River, Burias Island. March 5, 1909. Length 90 mm.

11522. Six examples. Dumaca River, Luzon. February 25, 1909. Length 53 to 98 mm.

One example. Canmahala Bay, small stream, Ragay Gulf. March 11, 1909. Length 68 mm.

8163. Cebu market, Cebu. August 29, 1909. Length 58 mm.

One example. Iwahig River and tributaries, Puerta Princessa, Palawan. April 4, 1909. Length 68 mm.

Six examples. Malampaya River, Palawan, beyond tide water. December 26, 1908. Length 66 to 78 mm.

One example. Nanjan River, Nundoro. June 5, 1908. Length 94 mm.

One example. Malinao River. April 2, 1909. Length 58 mm.

Eight examples. Nonucan River, Camp Overton, Nundanao. August 6, 1909. Length 25 to 56 mm.

One example. Pancol, creek at head of tide. Malampaya Island. December 25, 1908. Length 67 mm.

Five examples. Panguaron River, Port Caltom. December 16, 1908. Length 48 to 74 mm.

20884. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 76 mm.

Two examples. Tayabas River near mouth. July 25, 1909. Length 69 to 81 mm.

Four examples. $Y_o$in River, Tayabas. February 25, 1909. Length 57 to 104 mm.

Butis butis (Buchanan-Hamilton)

Cheilodipterus butis BUCHANAN-HAMILTON, Fishes of Ganges, pp. 57, 367, 1822 (type locality, Ganges River below Calcutta). - GRAY, Illustrat. Ind. Zool. Hardwicke, vol. 2, pl. 93, fig. 3, 1833-34.

Eleotris butis CANTOR, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1178, 1849 (1850) (Penang). - BLEEKER, Verh. Batavia. Genoot. (Nat. Ichth. Bengal), vol. 25, p. 50, 1853 (reference). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 116 (China; Philippines; Borneo; Amboina; Pinang; India). - DAY, Proc. Zool. Soc. London, p. 28, 1865 (Cochin, Malabar); ~~\~~ Fishes of Malabar, p. 114, 1865. - BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 174, 1865 (Siam). - PLAYFAIR, Fishes of Zanzibar, p. 73, 1866 (fresh water of Johanna; Mozambique). - PETERS, Monatsb. Akad. Wiss. Berlin, p. 268, 1868 (Samar). - SAUVAGE and DE THIERSANT, Ann. Sci. Nat., ser. 6, vol. 1, Zool. art. 5, p. 3, 1874 (China). - MARTENS, Preuss. Exped. Ost Asien, vol. 1, p. 392, 1876 (Singapore). - DAY, Fishes of India, pt. 3, p. 315, pl. 67, fig. 3, 1877 (Calcutta).- KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Changi).- SAUVAGE, Bull. Soc. Philom. Paris, ser. 7, vol. , p. 151, 1882-83 (Nenam).- RAMSAY and OGILBY, Proc. Linn. Soc. N.S. Wales, ser. 2, vol. 1, p. 81, 1886

(Strickland River, New Guinea). - ELERA, Cat. Fauna Filipinas, vol. 1, p. 524, 1895 (Philippines). - BOULENGER, Ann. Mag. Nat. Hist. London, ser. 6, vol. 15, p. 186, 1895 (Palawan). - VAILLANT, Nouv. Arch. Mus. Hist. Nat. Paris, ser. 3, vol. 5, p. 57, 1895 (Palawan). - Duncker, Naturh. Mus. Hamburg, Mitteil, vol. 21, p. 161, 1903 (1904) (Kuala Langat; Muar River). - WEBER, Nova Guinea, vol. 9, pt. 4, p. 597, 1913 (Lorentz River and Humboldt Bay). - BOULENGER, Cat. Fresh Water Fishes Africa, vol. 4, p. 10, fig. 6, 1916 (Johanna, Comoro Islands). - BARNARD, Ann. South Afric. Mus., vol. 21, p. 810, Oct. 1927 (Mozambique).

Eleotris (Butis) butis DUNCKER, Mitteil. Naturh. Mus. Hamburg, vol. 27, p. 253, 1911 (Vakvella; Hunupitiya; Panadhure; Trincomali). - BEAUFORT, Bydr. Dierk. Amsterdam, vol. 19, p. 136, 1913 (Waiu Waige River, Waigu). - WEBER, Siboga Exped., vol. 57, Fische, p. 448, 1913 (Bima; Makassar). - RENDAHL, Arkiv for Zool., Stockholm, vol. 16, No. 2, p. 12, 1924 (reference).

Butis butis BLEEKER, Ned. Tyds. Dierk., vol. 4, p. 128, 1873 (1874) (Canton); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 62, 1877 (Sumatra; Pinang; Singapore; Java; Madura; Borneo; Celebes; Ceram; Amboina; Philippines). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 513, Aug.

16, 1905 (Baram, Borneo). - JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 384, 1905 (1906) (reference). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 275, 1908 (Manila; Iloilo); Philippine Journ. Sci., p. 46, 1910 (reference). - SEALE, Philippine Journ. Sci., vol. 9, p. 74, 1914 (Hong Kong). - FOWLER, Copeia, No. 58, p. 65, June 18, 1918 (Philippines). - OSHIMA, Annot. Zool. Japan, vol. , No. , p. 272, 1919 (Taihoku, Formosa). - FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 58, p. 320, 1920 (Soochow). - REEVES, Journ. Pan-Pac. Res. Inst., vol. 2, No. 3, p. 13, July-Sep. 1927 (reference). - HORA, Journ. Nat. Hist. Soc. Siam, vol. 6, No. 2, p. 179, 1923 (Bangkok; Montaburi). - CHABANAUD, Bull. Econom. Indo-Chine, vol. 6, No. 69, p. 578, 1924 (Gulf of Siam). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 290, 1927 (Orion; Orani; Philippines). - FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 71, art. 10, p. 11, 1927 (Benkoelen, Sumatra; Batavia, Java). - HERRE, Gobies of Philippines, p. 48, pl. 4, fig. 1, 1927 (Abulug; Vigan; Gulf of Lingayen; San Fabian; Agno River; Orani; Orion; Obando; Baluiag; Malabon; Manila; Laguna de Bay; Nasugbu; Polillo; Baco; Capiz; Iloilo; Dumangas; Buena Vista; Davao; Hong Kong; Amoy; India). - FOWLER, Mem. Bishop Mus., vol. 10, p. 394, 1928 (compiled); Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 614, 1929 (Hong

Kong); vol. 83, p. 448, 1931 (Singapore). - CHU, Biol. Bull. St. John's Univ., No. 1, p. 157, Jan. 1931 (reference). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 157, 1934 (Bangkok); vol. 87, p. 160, 1935 (Bangkok; Paknam; Keng Sok). - SUVATTI, Index Fish. Siam, p. 150, 1936 (Pakphun; Bangpakong River; Bandai; Samut Prakan; Laem Sing). - TOMIYAMA, Jap. Journ. Zool., vol. 7, No. 1, p. 43, fig. 3, 1936 (Philippines). - ROXAS and MARTIN, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 220, 1937 (reference). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 89, p. 248, 1937 (Bangkok; Tachin); ~~Cat.~~ List Malaya Fishes, p. 208, 1937 (Malaya).

Eleotris humeralis VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (185) 246, 1937 (type locality, Bengal). - BLEEKER, Verh. Batavia. Genoot. (Madura), vol. 22, p. 5, 1849 (Kammal); (Blenn. Gobioid.) vol. 22, p. 22, 1849 (Batavia; Samarang; Surabaya; Pasuruan; Bangcallong; Kammal); (Midd-Ost Java), vol. 23, p. 9, 1850.

Eleotris prismatica BLEEKER, Verh. Batavia, Genoot. (Blenn. Gobioid.), vol. 22, p. 23, 1849 (type locality, Madura); (Madura) vol. 22, p. 5, 1849 (Madura); (Midd-Ost Java), vol. 25, p. 9, 1850.

Butis prismaticus BLEEKER, Act. Soc. Sci. Ind. Neerl. (Enum. Pisc.), vol. 6, p. 113, 1859 (reference); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2,

vol. 11, p. 61, 1877 (Java; Madura). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 275, 1908 (Cuyo; Manila); Philippine Journ. Sci., p. 46, 1910 (reference).

Eleotris melanopterus BLEEKER, Nat. Tyds. Ned. Indie, vol. 3, p. (690) 706, 1852 (type locality, Wahai; Bulucomba and Kema, Celebes); p. 741 (Boeloekomba; Kema); vol. 6, p. 458, 1854 (Amboina); vol. 10, p. 347, 1856 (Rio, Bintang); Act. Soc. Sci. Indo Neerl., No. 3, vol. 1, p. 9, 1856 (Macassar).

Butis melanopterus BLEEKER, Nat. Tyds. Ned. Indie, vol. 13, p. 57, 1857 (Kajeli, Buru); Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 32, 1861 (Singapore); ser. 2, vol. 2, p. 293, 1868 (Rio, Bintang).

Eleotris amboinensis (not BLEEKER) DAY, Proc. Zool. Soc. London, 1869, p. 303 (Orissa).

Butis dayi BLEEKER, Verslag. Med. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 68, 1877 (on DAY).

Eleotris longicauda DE VIS, Proc. Linn. Soc. New South Wales, vol. 9, pt. 3, p. 691, 1885 (type locality, Brisbane River).

Butis leucurus JORDAN and SEALE, Proc. U.S. Nat. Mus., vol. 28, p. 794, fig. 13, July 3, 1905 (type locality, Negros, Philippines); Bull. Bur.

Fisher., vol. 26, p. 40, 1906 (1907) (Cavite). - EVERMANN and SEALE,

Bull. Bur. Fisher., vol. 26, p. 104, 1906 (1907) (San Fabian; Bacon).

Depth 4 3/5 to 5 1/2; head 2 2/5 to 3 1/3, width 1 3/5 to 2.Snout 2 2/5 to 4 in head from snout tip; eye 5 to 6, 1 3/4 to 2 3/4 in snout, 1 1/4 to 1 3/4 in interorbital; maxillary reaches eye center, not quite to eye with age, length 2 1/5 to 2 3/5 in head from snout tip; teeth moderately long, conic, sharp pointed, in bands in jaws; interorbital 5, concave; preopercle edge entire. Gill rakers 3 + 8, low broad tubercles, greatly shorter than gill filaments, which 1 3/5 in eye.

Scales 28 to 36+- in median lateral series, with very small additional or auxillary variable scales or 1 to 6 on basal portions of scales on body; 9 to 13 transversely; 18 to 30 predorsal. Finely serrated ridge along upper and hind edges of orbit, from which divided by 2 rows of scales; serrated ridge each side of mouth;serrations variable, obsolete with age. Scales with 10 to 12 basal radiating striae; apical denticles 29 to 35; circuli moderate.

D. VI or VII--I, 8, i, or I, 9, i, third spine 2 9/10 in total head length, first ray 2 1/2, last ray 1 9/10; A. I, 7, i, to 9, i, second ray 2 3/5 to 2 9/10; caudal 1 1/3 to 1 2/5, convex behind; least depth of caudal peduncle 3; pectoral 1 3/5 to 1 2/3; ventral 2.

Dark gray browm to walnut brown above, sides and under surface fawn color. Three large dark brown blotches on side, buckled across back by narrow dark bar. Under surface of head speckled with darker. Dorsals and caudal dark

or dusky gray. Caudal marked with fine waved dark cross abrs. Spinous dorsal largely blackish, and 3 longitudinal dark bands on soft dorsal, other fins pale like lower surface, with a few blotches of deep brown . Pectoral base deep brown.

Mozambique, Comoro Islands, India
Malaya, East Indies, Philippines,
Siam, China, Formosa, Queensland.

I place Eleotris prismatica Bleeker with the present species as I am unable to find sufficient characters for distinction. One of the specimens reported as Butis prismaticus by Jordan and Richardson, with the body depth given as 4 to 4½ is not distinct. The statement "They are plainly distinguished from Butis butis by their shorter, more robust body, shorter maxillary, smaller eye, and finer teeth" does not appear to me to be valid differences.

I find no distinctions for Butis leucurus Jordan and Seale, and their statement "This species, having no serrated crests on the head, may not be congeneric with Butis butis", is of no moment.

In naming Butis dayi Bleeker had no materials, but simply applied the name to Day's short account of his Orissa material. He mentions Day's transverse scale count as 15, body depth 5, head 3, pectoral rays 17 and maxillary reaching eye center.

Two examples. Angus River, Dagupan, Luzon. March 19, 1908. Length 78 to 83 mm.

Four examples. Buena Vista, Guimaras Island. January 14, 1909. Length 102 to 109 mm.

One example. Cebu market. March 22, 1909. Length 68 mm.

22131 [1890]. Cebu market. September 4, 1909. Length 106 mm.

Two examples. Chase Head, stream near village, Endeavour Strait, Palawan. December 22, 1908. Length 75 to 99 mm.

19378. Iloilo market, Panay. March 24, 1908. Length 125 mm.

Fourteen examples. Iloilo market. June 1, 1908. Length 74 to 116 mm.

Two examples. Malampaya River, beyond tide water, Palawan Island. December 26, 1908. Length 70 to 104 mm.

11879, 11880. Manila market, Luzon. March 14, 1908. Length 103 to 114 mm.

10670. Manila market. June 17, 1908. Length 105 mm.

9070, 13682. Manila market. June 24, 1908. Length 76 to 90 mm.

1029 (metal). Three examples. Manila market. December 12 to 15, 1907. Length 73 to 77 mm.

One example. Port Dupon River, fresh water. March 7, 1909. Length 125 mm.

Four examples. Putoc River, back water ponds, Mariveles. January 30, 1909. Length 78 to 103 mm.

19631. Tayabas River mouth. February 25, 1909. Length 98 mm.

Four examples. Tayabas River mouth. July 25, 1909. Length 87 to 117 mm.

Two examples. Makassar market, Celebes, Dutch East Indies. December 27, 1909. Length 105 to 107 mm.

One example. Sebatic Island, Borneo, October 1, 1909. Length 108 mm.

U.S.N.M., No. 51953. Negros. Dr. Bashford Dean. Length 75 mm. Type of Butis leucurus.

U.S.N.M., No. 56008. San Fabian. C.L. Hall. Bur. Fisher. (3858). Length 103 mm. As Butis leucurus.

U.S.N.M., No. 56297. Manila. Dr. G.A. Lung. Two examples. Length 89 to 100 mm. As Butis leucurus.

U.S.N.M., No. 72274. Cuyo. R.C. McGregor. Length 155 mm. Depth 4½. As Butis prismaticus.

U.S.N.M., No. 83089. Singapore. Wilkes Exploring Expedition. Depth 4 7/8. Length 91 mm.

U.S.N.M., No. 83092. Singapore. Wilkes Exploring Expedition. Two examples. Depth $4\frac{1}{4}$ to 4 4/5. Length 91 to 120 mm.

U.S.N.M., No. 102586. Iloilo, Philippines. April 6, 1929. Lieut. H.C. Kellers. Length 64 mm. Depth 5 4/7.

U.S.N.M., No. 102638. Garo River, Panay. April 2, 1929. Lieut. H.C. Kellers. Length 82 mm. Depth 4 1/3.

Butis melanostigma (Bleeker)

Eleotris melanostigma BLEEKER, Verh. Batavia. Genoot. (Blenn. Gobioid), vol. 22, p. 23, 1849 (type locality, Straits of Madura near Surabaya and Mammal); (Midd. Oost Java), vol. 23, p. 9, 1850; Nat. Tyds. Ned. Indië, vol. 1, p. 3, 1850 (1851) (Bandjermassing, Borneo), p. 261 (Borneo); vol. 2, p. 59, 1851 (Borneo), pp. 195, 419 (Borneo); vol.3, p. 412, 1852 (Borneo); vol. 5, p. 428, 1853 (Sambas); vol. 7, p. 313, 1854 (Perdana); vol. 8, p. 152, 1855 (Bandjermassing); vol. 9, p. 418, 1855 (Bandjermassing). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 117, 1861 (copied). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Mutang; Simunju, Borneo). - ELERA, Fauna Filipinas, vol. 1, p. 524, 1895 (Luzon River; Pasig; Laguna de Bay).

Butis melanostigma BLEEKER, Act. Soc. Sci. Ind. Neerl. (Enum. Pisc.), vol. 6, p. 113, 1857 (reference); vol. 2, No. 6, p. 3, 1857 (Kahajan, Borneo); (Acht. Sumatra) vol. 8, p. 41, Feb. Aug. 1859 (Palenbang, Sumatra); (Borneo) vol. 8, p. 17, 1860 (Borneo); Ned. Tyds. Dierk., vol. 2, p. 34, 1865 (Siam), p. 174 (Siam); (Arch. Neerl. Sci. Nat. Harlem, vol. 10, p. 105, 1875 (reference); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11,

p. 68, 1877 (Sumatra, Java, Madura, Borneo).

Eleotris wolffii BLEEKER, Nat. Tyds. Ned. Indie, vol. 1, p. 253 (260), 1850 (type locality, Bandjermassing); vol. 1, pp. 261, 270, 1851 (Borneo); vol. 2, p. 59, 1851 (Borneo), p. 195 (Borneo), p. 49 (Borneo); vol. 3, p. 412, 1852 (Borneo).

Butis wolffi BLEEKER, Act. Soc. Sci. Ind. Neerl. (Enum. Pisc.), vol. 6, p. 113, 1859 (reference); (Borneo) vol. 8, p. 17, 1860 (Borneo).

Depth 5 to 6 in length; head 3 2/5 to 3½, width 1¾ to 2. Snout depressed, wide; eye 5 to 6 in head, 1 to 1½ in interorbital; maxillary reaches ½ in eye; teeth in villiform bands, pluriserial; ridges on interorbital snout and temporal regions smooth or crenlate.

Scales 30 in lateral series; 9 or 10 transversely between second dorsal and anal; 25 predorsal forward to eyes. Head above, cheek, preopercle and opercle densely scaled, also between anterior nostrils. Scales on head ctenoid, in areas of preopercle, interopercle and cheek very small. Small scales on nape, chest, breast, belly and sides of tail ctenoid ciliate.

Dorsal VI - I, 8 or 9, second and third spines longest or less than half body depth; Anal I, 8 or 9, like second dorsal; cauda; shorter than head, obtusely convex below, rounded or angulate above; pectoral rays 18 to 20, little shorter than head without snout; ventral similar, rays I, 5.

Blackish to brown or brownish green above, below paler to golden. Iris violet or green, edge of pupil golden. Head and body dotted or spotted with blackish sparsely, on cheek and postocular region frequently radiating from eye. First dorsal black or brown, other fins with brownish or hyaline violaceous membranes, rays golden or red. Pectoral with basal irregular black spot, bordered red, otherwise brown variegated with many brown lines. Soft dorsal, ventral and anal bordered with red.

Length 64 to 142 mm. (Bleeker.)

East Indies, Siam. Reported from the Philippines by Elera.

Butis gymnopomus (Bleeker)

Eleotris gymnopomus BLEEKER, Nat. Tyds. Ned. Indië, vol. 4, p. 274, 1853 (type locality, West Sumatra); vol. 5, p. 176, 1853 (Marawang, Banka); vol. 6, p. 517, 1854 (Oelakan, West Sumatra); vol. 7, p. 313, 1854 (Tjiringin, Perana).

Butis gymnopomus BLEEKER, Nat. Tyds. Ned. Indië, vol. 12, p. 215, 1856 (Nias); vol. 20, pp. 216, 450, 1859-60 (Singapore); vol. 22, p. 240, 1860 (Bali); Act. Soc. Sci. Ind. Neerl., No. 9, vol. 3, p. 2, 1857-58 (Padang, Sumatra); vol. 8 (Sumatra), p. 12, 1859 (Benculen); vol. 8 (Acht. Sumatra), p. 41, Feb.-Aug. 1859 (reference); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 70, 1877 (Sumatra; Nias; Singapore; Banka; Java; Bali; Borneo). - FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 550, June 10, 1904 (Padang, Sumatra). - HERRE, Gobies of Philippines, p. 51, 1927 (Daguitan River; Rabon; Capiz; Lake Buhi). - ROXAS and MARTIN, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 220, 1937 (reference). - FOWLER, ~~Cat.~~ List. Fish. Malaya, p. 208, 1938 (Singapore).

24134. Abuyog near mouth of Bito River, Leyte. July 26, 1909. Length 70 mm.

Four examples. Basud River in fresh water, Luzon. January 15, 1909. Length 37 to 86 mm.

Three examples. Basud River. June 15, 1909. Length 66 to 71 mm.

One example. Bito Lake, Aboyog, Leyete. July 26, 1909. Length 38 mm.

One example. Chase Head, stream near village, Endeavour Strait, Endeavour. December 22, 1908. Length 75 mm.

Twenty-one examples. Dumaca River, Luzon. February 25, 1909. Length 42 to 98 mm.

Six examples. Iwahig River and tributaries, Puerta Princessa, Palawan. April 4, 1909. Length 62 to 117 mm.

11390. Jari River, Tayabas. February 25, 1909. Length 122 mm.

One example. Malbato River. December 17, 1908. Length 78 mm.

One example. Malinao River. April 2, 1909. Length 95 mm.

One example. Manila Harbor. December 30, 1907. Length 63 mm.

One example. Putoc River back water ponds, Mariveles, January 30, 1909. Length 60 mm.

21707, 21708, 21709. Nine examples. Ragay River, fresh water,

Ragay Gulf, Luzon. March 10, 1909. Length 51 to 90 mm.

Eleven examples. Panguaron River, Port Caltom. December 19, 1908.

Length 35 to 98 mm.
One example. Panguaron River. December 16, 1908. Length 35 mm.

One example. Surigao, Mindanao. May 8, 1908. Length 66 mm.

One example. Tayabas River near mouth. July 25, 1909. Length 84 mm.

Four examples. Youi River, Tayabas. February 25, 1909. Length 59 to 107 mm.

Ten examples. Tawao River, Borneo, Dutch East Indies. September 30, 1909. Length 46 to 112 mm.

Genus Prionobutis Bleeker

Prionobutis BLEEKER, Arch. Néerl. Sci. Nat. Harlem, vol. 9, p. 305, 1874. (Type Eleotris dasyrhynchus GÜNTHER, orthotypic.)

Body cuneate in form, cylindrical anteriorly. Head large, obtuse, with strongly elevated, serrated bony crests. Snout convex. Eye high, little advanced from middle of head. Maxillary oblique, reaches below eye. Mouth rather large, little inclined, lower jaw longer or subequal with upper. Teeth in bands of several rows, those of outer row conspicuously longer, none canines. Scales 30 on trunk. First dorsal with 6 spines, and s econd fin with spine and 8 or 9 rays. Anal with spine and 7 to 9 rays.

East Indian region. Differs from Butis in the short obtuse head wider than deep, and the lower jaw scarcely or not projecting.

Analysis of Species

a.' Eyes 4 to 4½ in head, greater than concave interorbital; maxillary reaches below front of eye; back with large yellowish blotches, and pectoral rays unicolor. koilomatodon.

a.² Eyes 10? in head, less than wide level interorbital; maxillary reaches behind eye; back with 2 or 3 large yellowish blotches; pectoral rays varied with black. dasyrhynchus.

Prionobutis koilomatodon (Bleeker)

Eleotris koilomatodon BLEEKER, Verh. Batavia. Genoot. (Blenn. Gob.), vol. 22, p. 21, 1849 (type locality, Madura Straits near Surabaya and Kammal); (Madura) vol. 22, p. 5, 1849 (Kammal); (Midd. Oost-Java) vol. 23, p. 9, 1850; Nat. Tyds. Ned. Indie, vol. 5, p. 154, 1853 (Macassar); Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 32, 1861 (Singapore).

Eleotris (Butis) koilomatodon WEBER, Siboga Exped., vol. 57, Fische, p. 448, 1913 (Makassar). - RENDAHL, Arkiv för Zool., Stockholm , vol. 16, No. 2, p. 12, 1924 (reference). - WU, Contrib. Biol. Lab. Sci. Soc. China, vol. 7, Zool. ser. No. 1, p. 37, 1931 (Foochow).

Butis koilomatodon BLEEKER, Act. Soc. Sci. Ind. Neerl. (Enum. Pisc.), vol. , p. 113, 1859 (reference); (Celebes) vol. 8 , p. 45, 1860 (Celebes); Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, pp. 32, 57, 1861 (Singapore), p. 77 (Pinang). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 274, 1908 (Iloilo, Panay); Philippine Journ. Sci., p. 46, 1910 (reference).- CHU, Biol. Bull. St. John's Univ., No. 1, p. 157, Jan. 1931 (reference).

Prionobutis koilomatodon BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam,

ser. 2, vol. 11, p. 73, 1877 (Pinang, Singapore, Java, Madura, Celebes, Amboina). - HERRE, Gobies of Philippines, p. 52, pl. 4, fig, 2, 1927 (Amoy; Hong Kong; Malabon; Molo; Zarraga; Navalas; Pasig R.; Manila).- HERRE and MYERS, Lingnan Sci. Journ., vol. 10, Nos. 2-3, p.253, Aug. 1931 (Canton). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 89, p. 248, fig. 259, 1937 (Paknam; Tachin, Siam). - ROXAS and MARTINI, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 222, 1937 (reference). - FOWLER, List Fish. Malaya, p. 210, 1937 (Penang, Kuala Langat, Singapore, Seletar).

Eleotris caperatus CANTOR, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1178, 1849 (1850) (type locality, Penang).

Eleotris caperata GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 117, 1861 (types; China). - DAY, Proc. Zool. Soc. London, p. 694, 1870 (Andamans). - MARTENS, Preuss. Exped. Ost Asien, vol. 1, p. 392, 1876 (Singapore). - DAY, Fishes of India, pt. 3, p. 315, 1878. - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Selita; Mutang; Simunju). - DAY, Fauna British India, Fishes, vol. 2, p. 296, 1889. - ELERA, Cat. Fauna Filipinas, vol. 1, p. 524, 1895 (Luzon; Cavite; Santa Cruz.) - DUNCKER, Naturh. Mus. Hamburg, Mitteil, vol. 21, p. 161, 1903 (1904) (Kualla Langat).

Butis caperatus BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 58, 1865 (Amoy); vol. 4, p. 128, 1873 (China). - FOWLER, Journ. Bombay Soc. Nat. Hist., vol. 33, No. 1, p. 118, Sep. 30, 1928 (Bombay).

Butis caperata SEALE, Philippine Journ. Sci., vol. 9, p. 74, 1914 (Hong Kong).

Crassiops caperata HORA, Mem. Asiatic Soc. Bengal, vol. 6, p. 492, 1924 (Tale Sap, Singora). - SUVATTI, Index Fish. Siam, p. 151, 1936 (reference).

Prionobutis serrifrons RUTTER, Proc. Acad. Nat. Sci. Philadelphia, p. 84, 1897 (type locality, Swatow).

Butis serrifrons JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 26, p. 40, 1906 (1907) (Cavite).

Depth 3½ to 4 2/5; head 2¼ to 2¾, width 1½ to 1 3/5. Snout 3 1/8 to 4 in head from snout tip; eye 4 7/8 to 7¾, 1½ to 2 in snout, 1 7/8 to 2 in interorbital; maxillary reaches 1/8 to ½ in eye, length 2 1/5 to 2¼ in head from snout tip; teeth large, simple, conic, upper with inner largest and depressible, in about 5 series; lower teeth in 2 wide set rows with inner depressible; tongue convex on front edge; interorbital 3 3/5 to 3¾ in head from snout tip. Gill opening cleft well forward or extends opposite front eye edge. Gill rakers 2 + 7, short, finely spinescent tubercles.

Scales 28 or 29 + 2 or 3 in axial lateral series; 14 transversely above anal origin; 30 predorsal forward opposite hind nostril. Postocular scales rather large, smaller on cheek and absent from its lower part; muzzle and branchiostegal region naked. Long row of postocular papillae to suprascapula; 3 horizontal rather close set rows on cheek; row above nostrils, arches back each side of interorbital and meets postocular row, then down below lower eye edge to upper horizontal row on cheek; double close set row along each lower face of mandible ramus, continues upon preopercle flange; bar down on subopercle. Breast and chest scaly, also small scales on prepectoral and caudal base. Scales with 18 to 20 basal radiating striae; 30 + 30 very short apical points, with 4 transverse series of small basal elements; circuli fine.

D. VII - I, 8, i, fourth spine 2½ to 2 2/3 in total head length, last ray 1 4/5 to 2 1/5; A. I, 7, i, last ray 1 7/8 to 2 2/5; caudal 1 1/8 to 1 2/5, convexly rounded behind; least depth of caudal peduncle 2 4/5 to 3; pectoral 1 1/8 to 1 1/3, reaches 1/3 to ½ in base of soft dorsal or anal, rays i, 14; ventral I, 5, fin 1 2/5 to 2¼ in total head length. Anal papilla pointed cutaneous flap long as eye.

Yellowish brown to dark brown, with transverse dark brown cross bars, inclined down and back; one over head between eyes; one over opercles posteriorly; another posterior but before spinous dorsal; broad dark band at base of first dorsal, sometimes forks laterally on trunk; 2 from base of soft dorsal and one on caudal peduncle,and finally one at caudal base. Scales on sides often with pale to whitish spot, forming into longitudinal rows. Iris dark gray. First dorsal clouded with black and dark gray. Soft vertical fins dark brown, with 5 or 6 darker to blackish longitudinally inclined bands on soft dorsal and anal, and transversely on caudal. Pectoral similar, only with many as 7 or 8 arched blackish cross bars, and blackish basal blotch above. Ventral also with 4 or 5 black cross bars, black more extensive basally.

India, Andamans, East Indies, Malaya, Philippines, Siam. A handsome species, with variegated color pattern, especially when young. The long pectoral and dentition are characteristic features. Herre gives 107 mm. for his largest specimen.

4954, 4955. Iloilo market. March 29, 1908. Length 85 mm.

13986. Iloilo. May 31, 1908. Length 55 mm.

11762. Iloilo. June 2, 1908. Length 80 mm.

One example. Manila market. April 16, 1909. Length 93 mm.

Three e xample. Manila. April 17, 1909. Length 65 to 75 mm.

A 1028. Manila. December 12 to 18, 1907. Length 70 mm.

Three examples. Great Tobea Island, Dutch East Indies, tide pool. December 15, 1909. Length 33 to 48 mm.

U.S.N.M., No. 86483. China. A. de C. Sowerby. Length 167 mm.

Prionobutis dasyrhynchus (Günther)

Eleotris dasyrhynchus GÜNTHER, Ann. Mag. Nat. Hist. London, ser. 4, vol. 1, p. 265, pl. 12, fig. b, 1868 (type locality, Sarawak, Borneo).

Eleotris (Butis) dasyrhynchus WEBER, Siboga Exped., vol. 57 , Fische, p. 449, 1913 (Batu Pangal, Borneo).

Prionobutis dasyrhynchus BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 75, 1877 (reference).

Depth $4\frac{3}{4}$; head 3 1/3, greatest width equals length without snout. Snout very broad, depressed; eyes exceedingly small, directed upwards, separated by broad flat space; maxillary reaching behind orbit; mouth wide; teeth small, in band, outer series little larger, vomer toothless; cheek swollen; preopercle without spine.

Scales 29 in lateral series; 8 transversely between soft dorsal and anal. Scales ctenoid. Gill covers and upper part of cheeks scaly, rest of head naked. Preorbital and supraorbital ridge beset with rough prominences or spines.

D. $\underline{\underline{\text{VI}}}$ - 9, hind part of second dorsal and anal slightly elevated; A. 8; caudal rounded, of moderate length.

Brownish black, each scale with lighter margin. Back with 2 or 3 yellowish blotches; first at spinous dorsal origin sometimes absent; second at soft dorsal origin and third on back of caudal peduncle. Dorsal fins colored as body underneath. Caudal nearly uniform white. Pectoral rays variegated with black.

Length 63 mm. (Günther.)

Borneo.

Genus Mogurnda Gill

Mogurnda GILL, Proc. Acad. Nat. Sci. Philadelphia, p. 270, 1863. (Type Eleotris mogurnda RICHARDSON, monotypic.)

Odontobutis BLEEKER, Arch. Néerl. Sci. Nat. Harlem, vol. 9, p. 305, 1874. (Type Eleotris obscura SCHLEGEL, monotypic.)

Krefftius OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 736, Nov. 25, 1896. (Type Eleotris australis KREFFT, orthotypic.)

Body robust, compressed. Head broad, large. Mouth moderate, oblique, lower jaw projecting. Band of villiform teeth in each jaw, palate toothless. Tongue wide, mostly free, rounded in front. Gill openings separated by wide isthmus, gill membranes extending forward but not united across it. Gill rakers short, well spaced, about 8. Psendobranchiae present. Exposed edge of shoulder girdle forming smooth, curved ridge. Scales rather large, mostly ctenoid on body, cycloid on head; 30 to 40 in lateral body series; extend forward on upper surface of head to between hind nostrils and cover cheek and opercle. Rows of minute pores extend around eye, across cheek, behind preopercle and on each side of mandible. Dorsal spines 7 to 9, rays 9 to 14. Anal rays 9 to 14. Caudal rounded. Ventrals separate, with spine and 5 rays.

Differs from Ophiocara chiefly in physiognomy. Odontobutis has a narrow isthmus separating the gill openings, over which the gill membranes are narrowly united.

Mogurnda adspersus (Castelnau)

Eleotris adspersus CASTELNAU, Proc. Linn. Soc. New South Wales, vol. 3, pt. 2, p. 142, Dec. 1878 (type locality, Fitzroy River, Queensland).

Eleotris adspersa MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, p. 622, 1881 (reference).

Krefftius adspersus OGILBY, Proc. Linn. Soc. New South Wales, vol. 22, pt. 4, p. 789, Nov. 24, 1898 (Stanthorpe; Guntawang). - WAITE, Rec. Austral. Mus., vol. 5, p. 282, pl. 25, fig. 1, 1904 ( ). - OGILBY, Proc. Roy. Soc. Queensland, vol. 21, p. 98, 1908.

Mogurnda mogurnda adspersus MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 282, July 14, 1919 (South Australia; New South Wales; Queensland; types of Eleotris mimus, Eleotris concolor). - MC CULLOCH, Mem. Austral. Mus., No. 5, pt. 3, p. 363, Nov. 28, 1929 (reference).

— Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 170, July 7, 1925 (reference).

Eleotris mogurnda (not RICHARDSON) BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 71, 1865 (Port Jackson). - STEINDACHNER, Sitz. Ber. Akda. Wiss. Wien, vol. 56, pt. 1, p. 326, 1867 (Port Jackson). - CASTELNAU, Proc. Linn. Soc. New South Wales, vol. 3, p. 353, 1879 (Port Jackson). - OGILBY, Cat.

Fish. N.S. Wales, p. 36, 1886 (part).

Mogurnda mogurnda OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 757, Nov. 25, 1896 (New South Wales). - WAITE, Rec. Austral, Mus., vol. 5, p. 282, 1904 ( ); Mem. N.S.W. Nat. Club, vol. 2, p. 45, 1904.

Eleotris mimus DE VIS, Proc. Linn. Soc. New South Wales, vol. 9, pt. 3, p. 690, Nov. 29, 1884 (type locality, Brisbane). - OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, p. 754, 1897.

Eleotris concolor DE VIS, op. cit., p. 692 (type locality, Queensland coast).

Depth 4¼ to 4 1/3; head 3, width 1 2/3 to 1 7/8. Snout 3½ to 3¾ in head from snout tip; eye 4 2/3 to 5½, 1¼ to 1½ in snout, 1½ to 2 1/5 in interorbital; maxillary reaches 1/5 in eye, length 2¾ to 3 in head from snout tip; teeth finely villiform, in broad band in each jaw, none on palate; end of tongue convex; interorbital 2¾ to 3, low, depressed, to slightly convex. Gill opening extends forward opposite hind preopercle edge. Gill rakers 4 + 9 or 10, of which 3 above to 5 or 6 below rudimentary tubercles, others short points, ½ of gill filaments, which 2 in eye.

Scales 33 or 34 + in axial lateral series to caudal base; 11 transversely above anal origin; 18 or 19 predorsal forward to front of snout; 6 below eye on cheek. Head scaly, except muzzle and branchiostegal region. Small scales on pectoral and caudal bases. Row of papillae over eye, down over suborbitals with branches on cheek and row from behind eye to supra-scapula; row on preopercle flange, forward on lower face of each mandibular ramus. Scales with 15 to 20 basal radiating striae; row of 26 to 46 conic, slender, apical denticles; circuli moderate, finer with age and obsolete apically.

D. VII or VIII - I, 10, I or I, 11, I, fourth spine 2 7/8 to 3 1/3 in total head length, last ray 1 9/10 to 2 1/5; A. I, 11, I, to I, 12, I, last ray 2½ to 2 3/5; caudal 1¼ to 1 1/3, convex behind; least depth of caudal peduncle 2½ to 2¾; pectoral 1¼ to 1¾, rays 15; ventral ray I, 5, fin 1 7/8 to 2 in total head length. Anal papilla fleshy, rounded knob, ¾ of eye.

Brown, with darker brown axial streak on trunk and tail, in small example broken as 10 dark blotches, with last rounded and most contrasted. Two oblique dark brown bands across cheek from lower eye edge to opercles, also 2 more dark parallel bars above in young. Narrow dark postocular line.

Scattered pale to whitish irregular spots on body about dark lateral band or row of dark spots. Dorsals gray black, edges above whitish, soft fin with 4 or 5 rows of dark gray blotches. Anal blotched with dark brown, edge below whitish. Caudal brown, specked with darker basally. Paired fins grayish to pale, with dark brown blotch on pectoral base and several of dark bars on opercle reaching prepectoral region. Edges of ventrals whitish.

South Australia, New South Wales, Queensland. Reaches 112 mm.

U.S.N.M., No. 85851. Australia, 1921. Charles M. Hoy. Two examples. Length 76 to 110 mm.

Mogurnda australis (Krefft)

Eleotris australis KREFFT, Proc. Zool. Soc. London, pp. 182, 183, 1864, (type locality, Creeks near Sydney, etc., New South Wales); List Austral. Rept. Fish. Austral. Mus., p. 12, 1862 (nomen nudum). - GÜNTHER, Ann. Mag. Nat. Hist., London, ser. 3, vol. 20, p. 61, 1867 ( ). - CASTELNAU, Proc. Linn. Soc. New South Wales, vol. 3, p. 384, 1879 (Rope's Creek; Sydney). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, p. 617, 1881 (East coast New South Wales).

Krefftius australis OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 737, Nov. 25, 1896 (Liverpool, Port Stephens, Rope Cr., Cook R., Nowra, types). - WAITE, Rec. Austral. Mus., vol. 5, p. 283, pl. 35, fig. 2, 1904.

Mogurnda (Krefftius) australis MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 283, July 14, 1919 (reference).

Mogurnda australis MC CULLOCH, Fishes New South Wales, p. 111, pl. 36, fig. 314 b, 1919; Austral. Mus. Mem., No. 5, pt. 3, p. 363, Nov. 28, 1929 (reference).

Depth 3 4/5 to 4; head 3 1/8 to 3¼, width 1½ to 1¾. Snout 4 to 4¼ in head from snout tip; eye 5½ to 6, 1 1/3 to 1½ in snout, 1 4/5 to 2 in interorbital; maxillary reaches opposite front eye edge to 1/5 in eye, length 3 1/5 to 3¼ in head from snout tip; teeth finely villiform, in rather broad bands in jaws, none on palate or tongue; end of tongue convexly rounded; interorbital 3 to 3 3/5, low, depressed, level to slightly concave. Obtuse short preopercular spine. Gill opening extends forward to or slightly before vertical hind edge of preopercle. Gill rakers 2 + 8, short firm points, ½ of gill filaments, which 1¾ in eye.

Scales 28 + 3 or 4 in axial lateral series; 10 transversely above anal origin, 19 or 20 predorsal forward above hind nostril. Row of papillae over nostril and eye back and down to postocular line extending to supra-scapula, then down from hind eye edge along lower eye edge, and forward to preorbital; 2 short bars, as one along each side of front of snout edge; 2 short parallel transverse close set bars at each side of internasal space; horizontal row below eye on cheek; row along each side of lower mandibular face to and along preopercular flange. Head scaled, 7 rows on cheek below eye; muzzle and branchiostegal region naked. Small scales on chest, breast, front of interorbital, prepectoral region and caudal base.

D. VII - I, 8, I, second spine 2 1/10 to 2 1/8 in total head length, last ray 1¾ to 2; A. I, 8, I, last ray 1 4/5 to 1 9/10; caudal 1 1/10 to 1 1/8, convex behind; least depth of caudal peduncle 2 1/8 to 2½; pectoral 1 1/3 to 1½, rays i, 14; ventral rays I, 5 , fin 1 1/8 to 1½ in total head length. Anal papilla long flat lobe, 1½ times eye.

Dull dark brown, scarcely paler on breast and belly or under surfaces. Side of body with 7 broad blackish brown longitudinal bands, traversing scale junctures. Two blackish brown bars horizontally on upper

cheek from lower eye edge back to opercle. Obscure dark blotches on cheek and opercles. Iris dark gray. First dorsal pale brownish, with median and basal dark brown band longitudinally, and both inclined upward little posteriorly. Second dorsal pale brown with 5 longitudinal dark brown bands. Caudal brown, with 10 transverse rows of dark brown spots on rays. Blackish brown transverse bar at pectoral base. Pectoral dark brown, with pale basal bar bounded by narrow blackish brown transverse band. Ventral blackish brown, edged narrowly pale all around.

New South Wales. A handsome species with distinct longitudinal dark bands.

U.S.N.M., No. 48816. Cooks River, New South Wales. J.D. Ogilby. Three examples. Length 82 to 104 mm.

U.S.N.M., No. 59966. Cooks River. J.D. Ogilby. Two examples. Length 110 to 121 mm.

Mogurnda mogurnda (Richardson)

Eleotris mogurnda RICHARDSON, Voy. Erebus and Terror, Ichth., p. 4, pl. 2, figs. 1 and 2, 1844 (type locality, Port Essington, North Australia). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 111, 1861 (types; Port Essington). - STEINDACHNER, Sitzs. Ber. Akad. Wiss. Wien, vol. 56, pt. 1, p. 326, 1867 (Cape York). - CASTELNAU, Proc. Zool. Acclim. Soc. Victoria, vol. 2, p. 85, 1873 (Port Darwin); Victor Offic. Rec. Philad. Exhib. (Res. Fish. Australia), p. 23, 1875 ( ). - KLUNZINGER, Sitzs. Ber. Akad. Wiss. Wien, vol. 80, pt. 1, p. 384, 1879 (King George Sound).- MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, p. 617, 1881 (compiled).- PERUGIA, Ann. Mus. Civ. Stor. Nat. Genova, vol. 34, p. 547, 1894 (Inawi R.; Makeo, New Guinea). - WEBER, Nova Guinea, vol. 5, pt. 2, p. 253, 1908 (Wagani and Merauke R., south New Guinea); Abhandl. Senckenb. Naturf. Gesell., vol. 34, p. 34, pl. 1, fig. 2 (Aru Islands); Nova Guinea, vol. 9, pt. 4, p. 593, 1913 (Merauke, Sabang, Lorentz R., Alkmaar, Salzquelle, Sermowai R.).- Regan, Trans. Zool. Soc. London, vol. 20, pt. 6, p. 276, 1914 (Mimika R., New Guinea).

Mogurnda mogurnda MC CULLOCH and OGILBY, Rec. Austral. Mus., vol.

12, No. 10, p. 280, July 14, 1919 (Port Essington, Port Darwin, Catherine Mines and Yam Creek, Northern Territory ; Euraka Creek, Walsh R., Queensland; Red Bank Creek and Finke R., Central Australia; types of Eleotris larapintae).V- Fowler, Mem. Bishop Mus., vol. 10, p. 391, 1928 (compiled).-

MC CULLOCH, Mem. Austral. Mus., No. 5, pt. 3, p. 363, Nov. 28, 1929 (reference).

Eleotris larapintae ZIETZ, Rep. Horn Sci. Exp. Central Australia, vol. 2, p. 179, pl. 16, fig. 4, Feb. 1896 (type locality, Palm Creek; Red Banks Creek; Mc Donnell Ranges, Central Australia).

Mogurnda obscura (Schlegel)

Eleotris obscura SCHLEGEL, Fauna Japonica, Poiss., pts. 7 to 9, p. 149, pl. 77, figs. 1 to 3, 1845 (type locality, Streams of Nagasaki Bay, Japan). - BLEEKER, Verh. Batavia. Genoot. (Nat. Ichth. Japan), vol. 25, p. 16, 1853 (reference). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 115, 1861 (Japan; Chikiang). - KNER, Reise Novara, Fische, p. 185, 1865 (Java; Auckland). - MARTENS, Preuss. Exped. Ost Asien, vol. , p. 392, 1876 (Manila). - KÁROLI, Termesz. Füzetek, vol. 5, p. 167, 1881 (1882) (Canton; Tuimbu; Nagasaki). - ELERA, Cat. Fauna Filipinas, vol. 1, p. 524, 1895 (Luzon; Manila). - ISHIKAWA and MATSUURA, Prelim. Cat. Fish. Mus. Tokyo, pp. 37, 38, 1897.

Eleotris (Odontobutis) obscura RENDAHL, Arkiv for Zool. Stockholm, vol. 16, No. 2, p. 13, 1924 (Anhui; Kiangsu).

Odontobutis obscura BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 56, 1877 (reference). - JORDAN and SNYDER, Proc. U.S. Nat. Mus., vol. 23, p. 370, 1900 (Yokohama). - HERRE, Gobies of Philippines, p. 55, 1927 (Zamboanga). - ROXAS and MARTINI, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 222, 1937 (reference).

Odontobutis obscurus BLEEKER, Verh. Kon. Akad. Wet. Amsterdam, vol. 18, No. 5, p. 3, 1879 (Shanghai). - JORDAN and SNYDER, Proc. U.S. Nat. Mus., vol. 24, p. 43, 1901 (Tokyo Bay; Funaki; Kurume; Kawatana); Annot. Zool. Japan., vol. 3, p. 111, 1901 (Yokohama; Nagasaki). - JORDAN and FOWLER, Proc. U.S. Nat. Mus., vol. 25, p. 574, 1902 (Lake Yogo, Japan).- SEALE and BEAN, Proc. U.S. Nat. Mus., vol. 33, p. 248, 1907 (Zamboanga).- JORDAN and RICHARDSON, Philippine Journ. Sci., p. 46, 1910 (reference). - FRANZ, Anhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 66, 1910 (Yokohama). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 614, 1929 (Hong Kong). - CHU, Biol. Bull. St. John's Univ., No. 1, p. 159, Jan. 1931 (reference). - ANONYMOUS, Illustrat. Jap. Aquat. Pl. Animals, vol. 1, pl. 47, fig. 5, 1931.

Mogurnda obscura JORDAN and SEALE, Proc. U.S. Nat. Mus., vol. 29, p. 526, 1905 (Shanghai). - JORDAN, TANAKA, SNYDER, Journ. College Sci. Tokyo, vol. 33, art. 1, p. 339, 1913 (reference). - TOMIYAMA, Jap. Journ. Zool., vol. 7, No. 1, p. 44, fig. 1, a-b, 1936 (Kagosima to Toyama and Aiti; Korea; Wuchang, Ichang, Soochow).

Eleotris potamophila GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 557, 1861 (type locality, Yang tse kiang, 230 miles from mouth; Chikiang); Ann.

Mag. Nat. Hist., London, ser. 4, vol. 12, p. 242, 1873 (Shanghai). - SAUVAGE and DE THIERSANT, Ann. Sci. Nat., ser. 6, vol. 1, Zool., p. 2, 1874 (Yangtze). - MARTENS, Preuss. Exped. Ost Asien, vol. 1, p. 392, 1875 (Shanghai). - GÜNTHER, Ann. Mag. Nat. Hist., ser. 6, vol. 4, p. 219, 1889 (Kiu Kiang). - RENDAHL, Arkiv for Zool., Stockholm, vol. 16, No. 2, p. 12, 1924 (reference). - NICHOLS, Bull. Amer. Mus. Nat. Hist., vol. 58, art. 1, p. , 1928 (Tungting Lake, Anhwei). - HERRE and MYERS, Lingnan Sci. Journ., vol. 10, Nos. 2-3, p. 253, Aug. 1931 (note).

Eleotris potamophilus BLEEKER, Ned. Tyds. Dierk., vol. 4, p. 128, 1873 (1874) (reference). - CHU, Biol. Bull. St. John's Univ., No. 1, p. 158, Jan. 1931 (reference).

Eleotris varius (DABRY) SAUVAGE and DE THIERSANT, Ann. Sci. Nat., ser. 6, vol. 1, Zool., p. 2, 1874 (name in synonymy).

Depth 4 2/3 to 5½?; head 2½ to 2¾, width 1 4/5 to 2. Snout 3 4/5 to 4 in head from snout tip; eye 6½, 1½ to 2 in snout, 1½ to 1¾ in interorbital; maxillary reaches ½ in eye, expansion equals eye, length 2 1/3 to 2 2/5 in head from snout tip; tongue broadly convex in front; teeth quadriserial in jaws; mandibulars biserial laterally, rather large or innermost row largest; interorbital 5, slightly depressed; 4 small horizontal ridges on cheek; bony postocular keel to preopercle. Gill rakers 2 + 9, low asperous tubercles 1½ in eye.

Scales 38 or 39 + 6 in axial lateral series; 11 transversely at soft dorsal origin, 32 predorsal, 16 rows on cheek to angle of preopercle ridge. Scales with 15 to 29 basal radiating striae; apical denticles 23 to 30 + 22 to 30.

D. VII - 10, i or 11, i, third spine 2½ to 2 4/5 in total head length, third ray 2 1/3 to 2½; A. i, 7, i, third ray 2 1/3 to 2 3/5; caudal 1 2/5 to 1½, convex behind; least depth of caudal peduncle 3 1/8 to 4; pectoral 1½; ventral 2 1/8 to 2¼.

Back dusky brown, mottled with blackish. Below, head and belly whitish, soiled with dusky. Several large dark blotches on mandible and clusters of blackish dots on whitish branchiostegal membranes. Iris gray. Dorsals pale or grayish, clouded with blackish brown. Anal transparent or whitish with 2 or 3 irregular rows of blackish brown blotches. Caudal with 4 or 5 transverse blackish brown bands, general color dull brown. Pectoral pale, each ray with 5 or 6 blackish brown blotches. Ventral whitish, with 3 or 4 blackish brown blotches.

East Indies, Philippines, China, Korea, Manchuria, Japan. Reaches 195 mm.

U.S.N.M., No. 49913. Kawatana. D.S. Jordan and J.O. Snyder. Thirteen examples. Length 23 to 91 mm.

U.S.N.M., No. 57695. Japan. P.L. Jouy. Three examples. Length 129 to 186 mm.

U.S.N.M., No. 71419. Akune, Japan. Bureau of Fisheries. Five examples. Length 55 to 65 mm.

U.S.N.M., No. 86412. China. A. Sowerby. Eight examples. Length 47 to 105 mm.

U.S.N.M., No. 86962. Foochow. A. Sowerby. Three examples. Length 80 to 90 mm.

U.S.N.M., No. 86965. Quinsan, China. A. Sowerby. Eleven examples. Length 26 to 133 mm.

U.S.N.M., no. 49870. Nogoye, Owari, Japan. K. Otaki. Length 57 to 84 mm. Two examples.

U.S.N.M., no. 84004. Soochow, China, N. Gist Gee. Length 81 mm. As Butis butis.

U.S.N.M., no. 49884. Funaki, Omi, Japan. D.S. Jordan and J.O. Snyder. Length 104 mm.

U.S.N.M., no. 49893. Funayado, Yabe River, Japan. D.S. Jordan and J.O. Snyder. Length 70 to 78 mm. Four examples.

U.S.N.M., no. 49905. Tokyo, Japan. K. Otaki. Length 145 mm.

U.S.N.M., no. 56424. Shanghai, China. P.L. Jouy. Length 93 mm.

U.S.N.M., no. 57926. Zamboanga, Philippines, 1907. Dr. E. A. Mearns. Length 61 to 89 mm. Seven examples.

U.S.N.M., no. 71307. Mitijiri, Japan. Bureau of Fisheries. Albatross Expedition. Length 70 to 106 mm. Two examples.

U.S.N.M., no. 71491. Yamaguchi, Japan. Bureau of Fisheries. Albatross Expedition. Length 36 to 105 mm. Five examples.

U.S.N.M., no. 85906. Shanghai, in fresh water, China. A. de C. Sowerby. Length 124 to 143 mm. Five examples.

U.S.N.M., no. 86427. China. A. de C. Sowerby. Length 45 mm.

U.S.N.M., no. 86434. China. A. de C. Sowerby. Length 48 mm.

U.S.N.M., no. 86966. Near Quinsan, China. December 1923. A. de C. Sowerby. Length 105 to 171 mm. Fifteen examples.

Mogurnda striatus (Steindachner)

Eleotris striata STEINDACHNER, Sitzs. Ber. Akad. Wiss. Wien, vol. 53, p. 452, 1866 (type locality, Port Jackson). - MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 270, July 14, 1919 (reference).

Eleotris striatus OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 755, Nov. 25, 1896 (reference).

Mogurnda striatus MC CULLOCH, Mem. Austral. Mus., No. 5, pt. 3, p. 363, Nov. 28, 1929 (reference).

Depth 5 2/3 in total; head 4. Eye 4½ in head, 2 in snout, 2 in interorbital; maxillary not quite reaching eye; mouth cleft arched, lower jaw protruding.

Scales 35 in lateral series; 10 transversely. Scales strongly ctenoid, small at pectoral base, largest on tail.

D. VII - I, 10, first fin lower than second; A. I, 10 or 11, similar to second dorsal; caudal truncate; ventral shorter than caudal, pointed.

Sides of body dark brown, belly pale yellowish brown. Large obscure blackish blotches on side of body, under surfaces sprinkled with reddish brown. Cheek with 3 longitudinal blackish-brown streaks. Broken whitish angular cross band over head and crown connecting hind eye edges. Lip edge black. At end of gill cover a long blotch. Snout blotched with blackish. Dorsals and caudal with 3 to 6 rows of blackish spots, more distinct on former, smaller on caudal. Large obscure brown blotch in pectoral axil, and in front half of pectoral rays near base whitish cross streak, posteriorly brownish. Ventrals sprinkled with blackish posteriorly.

(Steindachner.)

New South Wales.

Genus *Paloa* Herre

Paloa HERRE, Gobies of Philippines, p. 56, 1927. (Type *Paloa polylepis* HERRE, orthotypic.)

Body elongate, compressed. Head large, wide, depressed. Snout long. Eye very small, high, just before middle in head length. Maxillary not quite reaching eye. Mouth very oblique, large, lower jaw protruding . Cheeks full. Six upper rows of teeth, outer upper row enlarged, strongly curved back. Lower teeth with outer row of few widely spaced, enlarged, conic, followed by 3 rows of minute teeth. Scales small, in 85 or more lateral series and 55 predorsal. Scales cycloid, extend on pectoral and caudal. Head scaled, except snout tip, lips and ventral surface of head. Radiating from eyes, also extending longitudinally and vertically on cheeks numerous lines of very minute papillae. First dorsal with 5 spines, second with spine and 10 rays. Anal with spine and 8 rays. Caudal broad, rounded, shorter than head. Paired fins narrow, short.

One species in the Philippines.

Paloa polylepis Herre

Paloa polylepis HERRE, Gobies of Philippines, p. 56, pl. 4, fig. 3, 1927 (type locality, Iloilo; San Jose). - ROXAS and MARTINI, Dep. Agric. Comm. Manila, Tech. Bull. 6, p. 223, 1937 (reference).

Depth 4; head 3 2/5, width 1 1/8 to 1 1/3. Snout 4 in head; eye more than 10, 2 1/5 in snout, $3\frac{1}{2}$ in interorbital; maxillary not or reaching opposite front eye edge, length 2 1/5 in head from snout tip; mouth well inclined or subvertical; interorbital 2 5/6, low.

Scales 88 to 92 in lateral series, 36 transversely, 58 to 62 predorsal. Scales on trunk irregular, posterior largest. Caudal scaly for more than half basal length. Radiating from eye, above and below, and on preopercle, lines of minute papillae.

D. $\underline{\underline{V}}$ - $\underline{\underline{I}}$, 10, third spine $3\frac{1}{2}$ in total head length, eighth ray $2\frac{1}{2}$; A. $\underline{\underline{I}}$, 8, seventh ray 2 2/3; caudal $1\frac{1}{2}$; least depth of caudal peduncle 1 9/10; pectoral 2; ventral 2 7/8.

In alcohol olive brown, very dark above, lighter on sides and becomes whitish on belly. Blackish brown band from snout back above eye and along upper part of side to caudal peduncle, where converging downward toward second band. Last starts behind eye, extends over opercle above pectoral, curving slightly downward along side, then straight back to caudal base. From pectoral axil third band passes down along lower part of side, curving upward posteriorly toward posterior end of middle band. From interorbital blackish median band runs back to first dorsal. Fins without markings.

Length 68 to 73 mm. (Herre.)

Philippines. The larger example noted above "has lost the longitudinal color bands. "

Genus Gigantogobius Fowler

Gigantogobius FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 511, Aug. 16, 1905. (Type Gigantogobius jordani FOWLER, orthotypic.)

Body elongate, very robust, depressed anteriorly, tail well compressed. Head large, depressed, flattened above, upper profile concave from snout in front to occiput. Snout broad, obtuse, depressed. Eye small, laterally superior, advanced near first third of head. Mandible prominent, well protruded in front. Mouth large, superior, oblique. Maxillary reaches below eye. Lips thick, fleshy. Teeth strong, small, in bands in jaws. Nostrils well separated, anterior pair each in short tube. Interorbital broad, low, flat. Gill rakers few, tubercular. Scales small, cycloid, rather narrowly imbricated. Head scaly except muzzle. Caudal and pectoral bases scaly. Two low, separated and small dorsals, first with 6 spines. Anal like second dorsal, opposite. Caudal short, rounded. Paired fins small.

Largest of the gobies.

Gigantogobius jordani Fowler

Gigantogobius jordani FOWLER, Proc. Acad. Nat. Sci. Philadelphia, p. 511, fig. 13, July 1905 (type locality, Baram, Borneo).

Depth 4; head 2 5/6, width 1 2/5. Snout $3\frac{3}{4}$ in head from snout tip; eye 11 3/5, 1 4/5 in snout; maxillary reaches about 2/3 in eye, length $2\frac{1}{4}$ in head from snout tip; upper jaw with inner band of minute villiform teeth, and outer larger row, none on palate or tongue; interorbital 3 2/5. Gill rakers 10 knob like tubercles.

Scales 88 + 6 in axial lateral series; 32 transversely above anal origin. Scales before spinous dorsal, and on head above and breast, besides on caudal base especially reduced and crowded.

D. VI - $\frac{1}{1}$, 9, $\frac{1}{1}$, second spine 3 2/5 in head from snout tip, third branched ray 2 2/3; A. $\frac{1}{1}$, 8, $\frac{1}{1}$, first branched ray 4 1/5, sixth ray $2\frac{1}{2}$; caudal 1 3/5, convex behind; least depth of caudal peduncle 2 3/7; pectoral 2, rays 17; ventral rays $\frac{1}{1}$, 5, fin 2 1/6 in head from snout tip. Anal papilla little longer than eye.

Deep blackish brown, with slate colored suffusion. Belly, lower surface of head and breast dirty brownish, scarcely paler. Head below with paler blotches, sometimes confluent. Fins dusky brown, variegated with blackish brown spots, forming somewhat barred appearance.

Borneo.

A.N.S.P., No. _____. Baram, Borneo, 1897. A.C. Harrison and Dr. H.M. Hiller. Length 660 mm. Type.

A.N.S.P., No. _____. Baram, Borneo. 1897. A.C. Harrison and Dr. H.M. Hiller. Length__ mm. Paratype.

Genus Leioeleotris Fowler

Leioeleotris FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, Nov. 6, 1934, p. 494. (Type Leioeleotris zonatus FOWLER, orthotypic.)

Body moderately compressed, elongate. Caudal peduncle rather deep. Head wide, moderately long, depressed. Snout short, wide. Eyes small, directed upwards, well separated, anterior in head. Mouth large, superiorly terminal, lower jaw protruding. Lips rather broad and fleshy. Tongue convex in front. Gill rakers few, short, feeble points. Head with papillate ridges on snout, cheek, mandible and preopercle. Gill opening restricted, short vertical slit entirely before pectoral base. Branchiostegals 6. Scales very small, cycloid, more or less imbedded. Two dorsals, spinous fin less than half of second fin, spines soft and flexible. Anal opposite long second dorsal, little smaller. Caudal rounded. Pectoral large, rounded. Ventrals small, well separated, inserted opposite pectoral bases.

Apparently unique in the combination of its characters, this genus not approaching any of the known forms closely. The head, unarmed or without spines, allies it with most of the known genera.

Leioeleotris zonatus Fowler

Leioeleotris zonatus FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 494, fig. 48, Nov. 6, 1934 (type locality, St. Lucia coast, north Zululand; Durban).

Depth 5 1/3 to 6; head 3 1/5 to 3¼, width 1 1/5 to 1 2/5. Snout 4 1/8 to 4 2/5 in head from snout tip; eye 4 4/5 to 5, 1 to 1 1/8 in snout, little greater than interorbital; maxillary reaches 1/3 to ½ in eye, length 2¼ to 2½ in head; teeth large, simple, conic, well spaced, uniserial in jaws, and small band on each palatine; interorbital 6 to 7, level. Gill rakers on second arch 5, 1/3 of gill filaments, which 3 in eye.

Scales 40 + 4 in axial lateral series; about 18 transversely. Caudal base scaly, otherwise fins naked. Scales with 16 radiating striae basally; circuli rather coarse, more or less continuous.

D. VI, 12, I or 13, I, third spine 2¼ to 2 1/3 in head, fin height 1 7/8 to 2; A. I, 9, I or 10, I, fin height 1 4/5 to 2 1/8; caudal 1 to 1 1/5, rudimentary rays well developed; least depth of caudal peduncle 2 3/5 to 2 2/3; pectoral 1¼ to 1 1/3, rays 20; ventral 1 1/3 to 1 2/5.

Brown, above and on sides sprinkled with innumerable darker dots, some rather pale extending on breast and belly. Broad blackish brown band, bordered broadly by pale in front and behind, not crossing belly, also reflected up on spinous dorsal. Dark line forward and down from front eye edge toward middle of maxillary. Broad blackish brown band, less than eye in width, obliquely down toward preopercle angle. Blackish brown spot about size of pupil before pectoral origin. Fins all more or less gray brown, soft verticals broadly edged paler to whitish. Ventrals whitish. Iris neutral gray.

Natal, Zululand.

A.N.S.P., No. 54992. St. Lucia coast, north Zululand, 1932. Length 47 mm. Mr. H.W. Bell - Marley. Type.

A.N.S.P., Nos. 54993 and 54994, paratypes, same data. Length 35 to 44 mm.

A.N.S.P.
Eight examples. Durban, Natal. Mr. H.W. Bell-Marley. Length 38 to 44 mm.

U.S.N.M., no. 103111. St. Lucie Coast, North Zululand. 1931. H.W. Bell Marley. In exchange with A.N.S.P. Length 43 mm.

Genus BORODA Herre

Boroda HERRE, Gobies of Philippines, p. 58, 1927 (Type Boroda expatria HERRE, ~~designated.~~ orthotypic.)

Body thick, wedge shaped, laterally compressed. Head large, wide, depressed. Snout broad, obtuse. Eye high, advanced or near first third in head. Mouth large, with strongly protruded lower jaw. Maxillary reaches below eye, inclined. Four rows of teeth anteriorly in both jaws, outer and inner rows enlarged and more or less caniniform. Interorbital broad. Scales 50 to 60 in lateral series, 17 to 20 transversely and 32 to 42 before dorsal. Head entirely scaled. Pores on head conspicuous. First dorsal with 6 spines, and second dorsal with spine and 9 rays. Anal with spine and 8 or 9 rays.

Philippines. Characterized by its dentition, very large broad head and the scalation.

Analysis of Species

a. Scales 50 to 52 in lateral series, 32 to 34 predorsal. albo-oculata.

a^{2}. Scales 60 in lateral series, 42 predorsal. expatria.

Boroda albo - oculata Herre

Boroda albo-aculata HERRE, Gobies of Philippines, p. 58, 1927 (type locality, Fresh-water south at Taytay, Palawan); Fish. Herre 1931 Philippine Exped., p. 80, 1934 (Culion). - ROXAS and MARTIN, Depart. Agric. Comm. Manila, Tech. Bull. 6, p. 222, 1937 (reference).

Depth 4½ to 4 4/5; head 3 to 3 1/5, width equal to body depth. Snout length little greater than eye; eye 5 1/5 to 5½, elevated; maxillary reaches below front portion of eyes, length in profile 2 1/3 in head; mouth wide, inclined, lower jaw projecting; teeth in 4 rows anteriorly in each jaw, outer upper row fixed, enlarged, widely spaced, others small, depressible and uniform; lower teeth enlarged, fixed, irregularly disposed, distributed in both outer and inner rows, especially far back and other teeth small, uniform and depressible; interorbital 3 2/5 to 4 1/5 in head, broad, flat; large pore on inner side of each nostril, one above and one behind eye, latter at origin of groove running above opercle, 2 more farther back on groove and 4 on hind edge of preopercle.

Scales 50 to 52 in lateral series, 17 or 18 transversely, 32 to 34 predorsal. Entire body, except lips, snout tip, space between eyes and lips, and chin, covered with scales. On middle of sides, behind pectoral and back to caudal scales ctenoid, much larger than elsewhere, others cycloid. Caudal scaly, other fins naked. Radiating downward from eye number of rows of minute papillae, with very small scales between posterior ones.

Dorsal VI - I, 9; A. I, 8; dorsal and anal low, without elongated

rays; caudal peduncle broad, laterally much compressed, elongate, least depth more than twice its length.

Color in alcohol yellowish brown, dusky on top of head and pale on belly, with narrow, alternating, longitudinal light and dark lines along sides. Posterior half of trunk vaguely marked with broad dark crisscross bands. Two blackish rounded spots on caudal base, one on upper, other on lower part. Dorsals, anals and caudal more or less cross barred with alternate rows of dark and light spots. Other fins faintly marked with dusky specks. Pupils of eyes noticeably white.

Length 22 to 86 mm. (Herre.)

Philippines.

Boroda expatria Herre

Boroda expatria HERRE, Gobies of Philippines, p. 59, pl. 5, fig. 1, 1927 (type locality, Unable to give exact locality; Lake Manguao). - ROXAS and MARTIN, Depart. Agric. Comm. Manila, Tech. Bull. 6, p. 223, 1937 (reference).

Depth 4 1/10 to 5; head 2 2/5 to 2 7/10, wider than trunk or width 1 2/3. Snout short, 4 in head from snout tip, convex in profile; eye 4 4/5 to 6, 1 to 1 1/5 in snout, 1½ in interorbital; maxillary reaches half way in eye, length in profile 2 2/7 in head from snout tip; mouth large, with strongly projecting lower jaw; 4 rows of upper teeth, outer row enlarged, 4 median of inner row much enlarged and point backwards, outer row long and inner row short; lower teeth in 4 rows anteriorly, but only 1 or 2 rows posteriorly, outer row enlarged, also inner row with posterior ones like stout pointed canines; interorbital 4 in head from snout tip; front nostril tubulate, hind one entirely open; large pore on inner side of each nostril, 1 above and 1 behind eye, 4 on rear edge of preopercle, and 3 above opercle on postocular groove.

Scales 60 in lateral series; 20 transversely between origins of second dorsal and anal; 42 predorsal. Entire body, except lips, snout tip and chin covered with cycloid scales, which also extend on pectoral and caudal fins.

Dorsal VI - I, 8 or 9, third spine 2 4/5 in total head length, fourth ray 2 1/3; Anal I, 8, sixth ray 2 3/7; caudal 1 2/3, convex behind; least depth of caudal peduncle 3; pectoral 1 5/6, rays 15; ventral rays I, 5, fin 2 4/5 in total head length. Anal papillae very small, clavate.

In alcohol brown, with darker diagonal and angled crossbars on sides. Each scale on side has an obscure pale spot, spots together forming definite longitudinal lines. Second dorsal with 4 rows of darker spots. Other fins uniform brown.

Length 16 to 144 mm. (Herre.)

Philippines.

Genus BUNAKA Herre

Bunaka HERRE, Gobies of Philippines, p. 60, 1927. (Type Bunaka pinguis HERRE, orthotypic.)

Body elongately ellipsoid, very thick, robust, and caudal peduncle moderately long. Head broad, depressed. Snout moderate, broadly rounded. Eye near first third in head, sublateral. Maxillary inclined, extends below eye. Cheek large, full. Teeth small, villiform, in broad bands in jaws. Postocular groove back above opercle to its upper posterior angle. Scales 55 to 60 in lateral series, 17 to 20 transversely and 40 to 45 predorsal. Each side of scaled interorbital space broad naked furrow, between which and eye single row of small scales. Cheek with 2 or more longitudinal furrows, completely scaled. Minute scales extend on pectoral and caudal fins. First dorsal with 6 spines, second dorsal with spine and 8 or 9 rays. Anal with spine and 8 or 9 rays. Vertical fins low, dorsals well separated. Caudal large, convex behind. Pectoral very broad. Ventral moderate.

One species. Distinguished from Eleotris by the absence of the preopercular spine, and from other genera as Ophiocara and Boroda in its dentition.

Bunaka pinguis Herre

Bunaka pinguis HERRE, Gobies of Philippines, p. 61, pl. 27, fig. 2, 1927 (type locality, Dumaguete River, Oriental Negros; Pulangui River near Reina Regente; Abra River; Lapid River; Kabatohan River; Kabulig River; San Jose; Pasig River); Fish. Herre 1931 Philippine Expedition, p. 81, 1934 (Zamboanga, Pulangi). - ROXAS and MARTIN, Depart. Agric. Comm., Manila, Tech. Bull. 6, p. 223, 1937 (reference).

Depth 4 to 4 3/5; head 2¾ to 2 9/10, width 1½ to 1¾. Snout 4 1/5 to 4 1/3 in head from snout tip; eye 5 3/5 to 6, 1 1/8 to 1½ in snout, 1 1/8 to 1½ in interorbital; maxillary reaches front of eye in young to ¼ in eye with age, length 2 4/5 to 3 in head from snout tip; teeth minutely villiform, uniform, in rather broad bands in jaws and none on palate; tongue broad, free, convex in front; interorbital 4 2/3 to 4 4/5 in head from snout tip, low, depressed or little concave; head unarmed or without preopercular spine. Gill rakers 3 + 9, short points, 1/3 of gill filaments, which 2 in eye.

Scales 55 +- 8 in axial lateral series; 19 transversely above anal origin, 34 predorsal forward midway in interorbital. Muzzle front of interorbital, lower half of cheek and preopercle, branchiostegal region naked. Lower scales of cheek very small or minute. Small scales on chest, breast, prepectoral and caudal base. Scales on head chest and breast cycloid, others ctenoid. Scales with 13 to 18 basal radiating striae; 38 to 54 apical denticles, graduated laterally larger on scale; circuli fine.

Dorsal VI - I, 7, 1, second spine 2 2/5 to 2½ in total head length, third branched ray 2 to 2½; Anal I, 7, 1, third ray 1 4/5 to 2 2/5; caudal

1 1/5 to 1¼, convex behind; least depth of caudal peduncle 2¼ to 2¾; pectoral 1 1/3 to 1½, rays 18; ventral I, 5, fin 1 3/5 to 1 2/3 in total head length. Anal papilla fleshy flap, depressed, end slightly notched.

General color burnt umber, with pale brown on under surface of head and belly. Deep broad umber band forward from eye to front of mouth, bordered above and below with cream colored streak. Postocular groove in scales with row of fine papillae blackish brown, and parallel one from lower hind eye edge to upper limb of preopercle similar. Lower surface of head including lower cheek and opercle speckled or spotted with white. Iris gray brown. Each row of scales on trunk and tail with longitudinal dark umber median band, with some irregular pale spots distributed axially on side. Spinous dorsal cream white, crossed by 3 blackish brown bands. Soft dorsal similar, only with 4 blackish brown cross bands. Caudal cream white, with 4 or 5 blackish cross bands, basal greatly broader than others. Anal like soft dorsal. Paired fins cream white with dark brown cross bands, though 2 large brown blotches on pectoral basally.

Philippines. Herre says "this is the largest Philippine goby known" and mentions one 257 mm. long. My specimens are young, and do not show the "single row of small scales between the eye and the naked groove" delimiting the median suqmous region of the interorbital. Moreover the lower half of the cheek being naked in my specimens and described as "cheeks large, full, completely scaled" in Herre's generic account of Bunaka, suggests this as a character of age.

8736. Gorantalo River. November 15, 1909. Length 94 mm.

Two examples. Nanjan River, Mindoro. June 5, 1908. Length 62 or 63 mm.

One example. Amilao River, Passi, Iloilo, January 14, 1909. Length 60 mm.

One example. Small creek at Varadero Bay, Mindoro. October 27, 1909. Length 58 mm.

Genus *Ophiocara* Gill

Ophiocara GILL, Proc. Acad. Nat. Sci. Philadelphia, p. 270, 1863.

(Type *Eleotris ophiocephalus* VALENCIENNES = *Sciaena macrolepidota* BLOCH, monotypic.)

Body robust, compressed. Head large, broad. Snout obtuse. Eye moderate. Mouth with lower jaw projecting in front. Each jaw with band of villiform teeth, and outer row of stronger ones. Tongue broad, subtruncate, free anteriorly. Interorbital broad, flat. Gill openings wide, extend well forward below, leaving narrow or moderately wide isthmus between. Gill rakers short, broad, 9 below. Pseudobranchiae present. Scales large, mostly ctenoid on body, cycloid on head, 28 to 38 in axial lateral series to hypural, extend forward on head before hind nostril, and completely cover cheeks and opercles. Mucigerous canals of head almost hidden in scales; some large open pores on snout, interorbital, nuchal groove and preopercle margin. Exposed edge of shoulder girdle forms smooth, curved ridge. Dorsal and anal fins short, former with 6 spines and 9 rays. Caudal and pectoral rounded. Ventrals widely separated, each with spine and 5 rays.

Ophiocara aporos (Bleeker)

Eleotris aporos BLEEKER, Nat. Tyds. Ned. Indië, vol. 6, p. (51) 59, 1854 (type locality, Sindangole, Halmaheira); vol. 9, p. 493, 1855 (Amasing and Madawang Rivers, Batjan). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 109, 1861 (Borneo; Oualan; Fiji; Wanderer Bay, Aneiteum). - BLEEKER, Verslag.Kon. Akad. Wet. Amsterdam, vol. 14, p. 111, 1862 (Batjan); Ned. Tyds. Dierk., vol. 1, p. 153, 1863 (Galela, Halmaheira), p. 160 (Morotal, Halmahera). - KNER, Reise Novara, Fische, p. 183, 1865 (New Holland). - GÜNTHER, Ann. Mag. Nat. Hist., London, ser. 3, vol. 20, p. 62, 1867 (Cape York). - SCHMELTZ, Cat. Mus. Godeffroy, No. 4, pp. 18, 19, 1869 (Ovalau; Kanathia).- BLEEKER, Arch. Néerl. Sci. Nat. Harlem, vol. 10, p. 105, 1875 (reference). - SCHMELTZ, op. cit., No. 7, p. 48, 1879 (Viti Islands). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Serangoon). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, p. 616, 1881 (Port Denison; Cape York). - PÖHL, Cat. Mus. Godeffroy, No. 9, p. 33, 1884 (New Britain). - REUVENS, Notes Leyden Mus., vol. 16, p. 152, 1895 (Sindangole).

Eleotris aporus Bleeker, Ned. Tyds. Dierk., vol. 2, p. 289, 1865 (Amboina). - PETERS, Monatsb. Akad. Wiss. Berlin, p. 268, 1868 (Samar). - BOULENGER, Ann. Mag. Nat. Hist., London, ser. 6, vol. 15, p. 185, 1895 (Balabac). - WEBER, Nova Guinea, vol. 5, pt. 2, p. 252, 1908 (Lake Sentani and Moso, north New Guinea); vol. 9, pt. 4, p. 593, 1913 (Lake Sentani and near Cape Djnar).

Ophiocara aporus BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 33, 1877 (Borneo, Ternate, Halmaheira, Morotai, Batjan, Amboina, Samar).

Ophiocara aporos OGILBY, Proc. Linn. Soc. New South Wales, vol. 22, p. 769, 1897 (New Caledonia). - JORDAN and SEALE, Bull. Bur. Fisher, vol. 25, p. 384, 1905 (1906) (reference). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 274, 1908 (Mindoro; Sibuyan); Philippine Journ. Sci., p. 46, 1910 (reference). - MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 13, No. 10, p. 275, 1919 (types of Eleotris planiceps; Cairns; New Britain; Solomons; Fiji; Malay Archipelago; Burdekin R., Barron R., Ingham). - HERRE, Gobies of Philippines, p. 65, pl. 5, fig. 2, pl. 28, fig. 3, 1927 (Lake Paoay; Karowan; San Fernando; Kabulig R.; Kabatohan R.; Pasig R.; Laguna de Bay;

Mauang R.; Cayman Lake; Molawin Creek; Balanak R.; Nasugbu; Lake Taal; Pausipit R.; Alabat Island; Mangso R.; Puru; Tambo R.; Calapan; Naujan R.; Mambach and Subaan Rs.; Tablas Island; Sibuyan; Catarman; Anahawan; Dumaguete R.; San Jose; Cuyo; Culion; Taytay; Balabac; Basilan; Zamboanga; Tatayan and Saub Rs.; Lapid R.). - FOWLER, Mem. Bishop Mus., vol. 10, p. 391, 1928 (compiled). - MC CULLOCH, Mem. Austral. Mus., No. 5, pt. 3, p. 366, Nov. 28, 1929 (reference). - FOWLER, Mem. Bishop Mus., vol. 11, No. 5, p. 360, 1931 (reference). - HERRE, Fishes Herre 1931 Philippine Exped., p. 81, 1934 (Laguna de Bay, Malawin brook, Majayjay, Nasugbu, Busuanga, Culion, Capiz, Mangutu, zamboanga). - FOWLER, Mem. Bishop Mus., vol. 11, No. 6, p. 441, 1934 (Fiji; New Britain). - TOMIYAMA, Jap. Journ. Zool., vol. 7, No. 1, p. 45, 1936 (Okinawa; Isigaki). - ROXAS and MARTIN, Depart. Agric. Comm., Manila, Tech. Bull. 6, p. 221, 1937 (reference). - FOWLER, ~~Cat.~~ List Fish. Malaya, p. 209, 1938 (Serangoon).

Eleotris hoedtii BLEEKER, Nat. Tyds. Ned. Indië, vol. 6, p.(458) 496, 1854 (type locality, Amboina Rivers); vol. 11, p. 385, 1856 (Kajeli, Buru); vol. 12, p. 215, 1856 (Nias); Act. Soc. Sci. Ind. Neerl., vol. 1, No. 5, p. 6, 1856 (Amboina); vol. 2, No. 7, p. 6, 1857 (Amboina); Nat. Tyds. Ned. Indie, vol. 13, p. 56, 1857 (Kajeli), p. 388 (Timor deli); vol.

16, p. 209, 1858 (Batjan); Act. Soc. Sci. Ind. Neerl., vol. 5, No. 8, p. 1, 1858-59 (Kiabatdiatas, Celebes); vol. 8, (Celebes), p. 44, 1860 (Celebes).- GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 110, 1861 (copied). - BLEEKER, Ned. Tyds. Dierk., vol. 1, p. 271, 1863 (Timor). - SCHMELTZ, Cat. Mus. Godeffroy, No. 1, p. 9, 1864 (South Seas); No. 2, p. 8, 1865 (Neva R., Viti Levu). - BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 150, 1865 (Bouro), p. 293 (Amboina). - SCHMELTZ, Cat. Mus. Godeffroy, No. 3, p. 9, 1866 (Viti Levu); No. 4, p. 18, 1867 (Viti Levu). - BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 300, 1868 (Waigiu). - SCHMELTZ, Cat. Mus. Godeffroy, No. 7, p. 47, 1879 (Viti Levu). - PÖHL, Cat. Mus. Godeffroy, No. 9, p. 33, 1884 (Viti). - REUVENS, Notes Leyden Mus., vol. 16, p. 150, 1895 (rivers between Mangih and Wasang; type). - ELERA, Cat. Faunæ Filipinas, vol. 1, p. 524, 1895 (Luzon; Laguna de Bay).

<u>Eleotris</u> <u>hoedti</u> BLEEKER, Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 2, p. 300, 1868 (Waigui); Arch. Néerl. Sci. Nat. Harlem, vol. 10, p. 105, 1875 (reference). - MARTENS, Preuss. Exped. Ost. Asien, vol. 1, p. 392, 1876 (Adenare at Flores). - WEBER, Nova Guinea, vol. 5, pt. 2, p. 253, 1908 (tributary Humboldt Bay, Manapiri, Klipong R., Tawarin R., north New Guinea); vol. 9, pt. 4, p. 593, 1913 (Lorentz R., Mbai R., Humboldt Bay). - WEBER and BEAUFORT, Nova Caledonia, Sarasin and Roux, Zool., vol.

2, pt. 1, p. 32, 1915 (Oubatche in fresh water).

Eleotris (Ophiocara) hoedti WEBER, Siboga Exped., vol. 57, Fische, p. 446, 1913 (Kelang; Nusa Laut; Dammer I.). - BEAUFORT, Bydr. Dierk. Amsterdam, vol. 19, p. 135, pl. 2, figs. 6-7, 1913 (Waiha brook at Mumes and Waisa River, Waigiu).

Ophiocara hoedti BLEEKER, Arch. Néerl. Sci. Nat. Harlem, vol. 13, p. 38, 1878 (New Guinea); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 35 1877 (Sumatra, Nias, Java, Timor, Buru, Amboina, Waigiu). - GILTAY, Mus. Roy. Hist. Nat. Belg. Mém., vol. 5, fasc. 3, p. 91, 1933 (Sorong, New Guinea).

Ophiocara hoedtii FOWLER, Bishop Mus., vol. 11, No. 5, p. 360, 1931 (reference); vol. 11, No. 6, p. 441, 1934 (reference).

Eleotris tolsoni BLEEKER, Nat. Tyds. Ned. Indië, vol. 6, p. 542, 1854 (type locality, Near Djunkulon, West Java); vol. 7, p. 313, 1854 (Djunkulon); vol. 20, p. 219, 1859-60 (Tandjon); Act. Soc. Sci. Neerl.Ind., vol. 8 (Sumatra), p. 14, 1859 (Tandjong), p. 41 (Sumatra).

Eleotris kuak THIOLLIERE, Fauna. Woodlark, p. 187, 1857 (type locality, Woodlark Island).

Eleotris macrolepidotus (not BLOCH) GÜNTHER, Journ. Mus Godeffroy, vol.

6, pt. 11, p. 186, 1877 (East Indies; North Australia; Pelew Islands; Fiji; New Hebrides). - SCHMELTZ, Cat. Mus. Godeffroy, No. 6, p. 14, 1877 (Pelew Islands).

Eleotris macrocephalus (not BLEEKER) GÜNTHER, op. cit., pl. 112, figs. B, B', B", 1877.

Eleotris planiceps (not CASTELNAU 1878) CASTELNAU, Proc. Linn. Soc. New South Wales, vol. 3, p. 49, 1878 (type locality, Lillesmere lagoon, Burdekin River, Queensland). - MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No.10, p. 270, July 14, 1919 (reference).

Eleotris laglaizei SAUVAGE, Bull. Soc. Philom., Paris, p. 54, 1880 (type locality, Manila).

Ophiocara laglaizei JORDAN and RICHARDSON, Philippine Journ. Sci., p. 46, 1910 (reference).

Eleotris aporocephalus MACLEAY, Proc. Linn. Soc. New South Wales, vol. 9, pt. 1, p. 33, May 23, 1884 (new name for Eleotris planiceps Macleay 1883).

Depth 3 7/8 to 4¼; head 2¾ to 3¼, width 1 2/5 to 1 2/3. Snout 3 4/5 to 4 in head from snout tip; eye 4 7/8 to 8½, 1½ to 2¼ in snout, 2 1/5 to 3½ in interorbital; maxillary reaches 4/5 to, or to front eye edge, length 3 to 3 2/3 in head from snout tip; teeth in rather broad villiform bands in jaws, of 8 to 10 irregular series; palate toothless; tongue convexly rounded in front; interorbital 2 1/5 to 2½ in head from snout tip, broad, flat; no preopercular spine. Gill rakers 4 to 6 + 10 to 13, lanceolate, 2 to 2 2/3 in gill filaments, which 2/3 to equal to eye.

Scales 29 to 34 + 4 to 8 in axial lateral series; 10 or 12 transversely above anal origin; 14 to 19 predorsal forward to upper lip. Head scaly, except end of snout, lips, mandible and branchiostegal region. Small scales on chest, breast and caudal base. Row of papillae over nostrils and eyes, join postocular row extending to suprascapula, then branch down around lower eye edge and forward on preorbital; 2 horizontal rows on cheek; row along each lower face of mandibular ramus; row along preopercular flange. Scales with 14 to 24 basal radiating striae; 75 to 100 + 91 to 110 slender minute apical denticles, uniserial, little enlarged toward outer edges of scale; circuli very fine, little coarser apically.

D. VI - I, 8, i, third spine 2 3/5 to 2 2/3 in total head length, third ray 2 to 2 1/10; A. I, 9, i or I, 8, i, ninth ray 2 to 2 1/3; caudal 1 to 1 1/5, convex behind; least depth of caudal peduncle 2 to 3; pectoral 1¼ to 1½, rays ii, 12 or 13; ventral rays I, 5, fin 1 1/5 to 1¾ in total head length. Broad flat anal papilla equals eye or little longer.

Largely dark uniform brown above, under surfaces of head, belly and tail lighter. Some scales on sides of body with obscure blackish brown spots. Three dark or blackish brown streaks back and little inclined down along side of head. Iris grayish. Spinous dorsal brownish, membranes darker

terminally. Soft dorsal and anal dark brown, anal with much paler lower edge. Caudal dark brown. Paired fins dark brown.

Andamans, Malaya, East Indies, Philippines, Riu Kiu, Queensland, Melanesia, Polynesia. Reaches 225 mm. according to Herre.

20204, Alimango River, Burias Island. March 5, 1909. Length 140 mm. (damaged specimen).

One example. Bagaong River 4 miles from mouth, Sablayan Bay, Mindoro. December 13, 1908. Length 51 mm.

21700. Cabugao Bay, Catanduanes Island. June 9, 1909. Two examples. Length 79 to 86 mm.

Four examples. Caluagan River 3 miles from mouth near Paluan Bay, Mindoro. December 11, 1908. Length 32 to 41 mm.

22402. Canmahala beach, Ragay Gulf. March 11, 1909. Length 83 mm.

19171 to 19179, 22939. Cascade River, Murcielagos Bay, northern Mindanao. August 20, 1909. Length 57 to 220 mm. Nineteen examples.

One example. Chase Head, stream near village, Endeavor Strait, Palawan. December 22, 1908. Length 87 mm.

22086. Isabella River, Basilan Island. September 11, 1909. Length 148 mm.

Two examples. Laguna de Bay, along shore, near Santa Cruz. December 17, 1907. Length 122 to 130 mm.

Eight examples. Laguna de Bay at head of river. June 21, 1908. Length 52 to 85 mm. These all have middle of side broadly mottled with

brown and silvery white.

6992 to 6994. Maagnas stream, Laganoy, Gulf of Luzon, June 17, 1909. Length 153 to 201 mm. Three examples.

9571 and 9572, 9574, 17208, 17211 and 17212. Mahinog, Camiguin Island. August 3, 1909. Length 122 to 242 mm. Seven examples.

20253 to 20256. Malinao River, Mantaquin Bay, Palawan. April 2, 1909. Length 86 to 140 mm. Seven examples.

17940 and 17941, 17951. Managua River, Cebu. August 25, 1909. Length 80 to 170 mm. Three examples.

11887 and 11888. Manila, Luzon. March 14, 1908. Length 145 to 175 mm. Two examples.

6263, 6268, 8186, 8187. Manila market. June 12, 1908. Length 138 to 159 mm. Four examples.

20182. Mariveles, Pucot River. January 29, 1909. Length 105 mm.

Three examples. Mati, small stream, Mindanao. May 15, 1908. Length 43 to 83 mm. Three examples.

Thirty-nine examples. Nanjan River, Mindoro. June 5, 1908. Length 24 to 54 mm.

One example. Nato River, Lagonoy Gulf. Luzon. June 17, 1909.

Length 14 mm.

19638. Pancol, Palawan. December 25, 1909. Length 154 mm.

One example. Port Jamelo, two miles up river, Luzon. July 13, 1908. Length 82 mm.

11954 to 11956. Port Mariveles. January 29, 1909. Length 138 to 188 mm.

One example. Putoc River back water ponds, Mariveles. January 30, 1909. Length 102 mm.

Eight examples. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 46 to 122 mm.

5859. San Roque, small stream, Leyte. July 29, 1909. Length 145 mm.

9546. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 145 mm.

Seven examples. Taal Lake, east side of island. December 26, 1907. Length 50 to 83 mm.

Twenty-nine examples. Varadero Bay, small creek, Mindoro. October 27, 1909. Length 53 to 142 mm. Some quite variegated, with 3 dark brown bands back over cheek and opercles from lower hind eye edge. Also variable

dark brown spots along and above dark axial row on side of body. Caudal greatly variegated with dark brown spots over greater basal part of caudal, contrasted with white.

One example. Youi River, Tayabas. February 25, 1909. Length 94 mm.

Three examples. Zamboanga. October 9, 1909. Length 97 to 152 mm.

One example. A 1023. Buka Buka Island, Celebes, Dutch East Indies. November 20, 1909. Length 146 mm.

18132, 18136. Amboina stream. December 5, 1909. Length 80 to 105 mm.

9800 to 9806, 9808 to 9810, 9991 to 9998, 13047 to 13054. Gorontalo, Celebes. November 15, 1909. Length 21 to 222 mm. Five-hundred and fourteen examples.

Two examples. Great Tobea Island tide pool. December 15, 1909. Length 42 to 85 mm.

U.S.N.M., No. 47821. Lillesmere. Australian Museum. Length 253 to 275 mm. Two examples.

U.S.N.M., No. 72234. Sibuyan, R.C. McGregor. Length 139 mm.

U.S.N.M., No. 52000. Negros, Philippines. Dr. Bashford Dean. Length 51 to 70 mm. As Hypseleotris cyprinoides. Though all now faded

and discolored they are the present species. These are from the lot of "seven specimens in good condition" Herre 1927 refers to under H. cyprinoides.

U.S.N.M., no. 83316. Balabac, Philippines. Wilkes Exploring Expedition. Length 150 mm. As Gobiomorphus gobioides. Predorsal scales 14 forward until midway in eyes.

U.S.N.M., no. 72240. Mindoro, Philippines. R.C. Mc Gregor. Length 190 mm.

U.S.N.M., no. 72241. Mindoro. R.C. McGregor. Length 220 mm.

Ophiocara darwiniensis (Macleay)

Ogonostoma darwiniense MACLEAY, Proc. Linn. Soc. New South Wales, vol. 2, pt. 4, p. 360, pl. 9, fig. 8, June 1878 (type locality, Port Darwin); vol. 4, p. 425, 1879 (reference).

Eleotris darwiniensis MACLEAY, op. cit., vol. 5, p. 616, 1881 reference).

Ophiocara darwiniensis MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 277, July 14, 1919 (types; Melville Island; Cook-town; Rockingham Bay). - Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 170, July 7, 1925 (reference). - MC CULLOCH, Mem. Austral. Mus., No. 5, pt. 3, p. 367, Nov. 28, 1929 (reference).

Eleotris ophiocephalus (not VALENCIENNES) KLUNZINGER, Sitzs. Ber. Akad. Wiss. Wien, Math. phys. Classe, vol. 80, pt. 1, p. 384, 1879 (1880) (Port Denison; Port Darwin). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 4, p. 63, 1880 (Solomon Islands).

Eleotris porocephalus (not VALENCIENNES) OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, p. 755, 1897.

Depth 5; head 4, broader than deep. Snout broadly rounded, scarcely interrupted by knob formed by hind extension of premaxillaries; eye 5 1/5 in head, little shorter than snout, 1 4/5 in interorbital; maxillary reaches ½ in eye; mouth oblique, mandible projecting; tongue broad, subtruncate; each jaw with band of villiform teeth in outer row conic and enlarged; lower teeth with outer row wanting laterally, replaced with row of enlarged inner teeth; nostrils separated, anterior tubular and overhangs lip, posterior with dermal margins and near eye; interorbital very broad, flat. Gill opening extends forward opposite hind eye edge.

Scales 37 in lateral series; 14 transversely between second dorsal and anal; 21 predorsal extend little forward of hind nostrils. Some scales on upper surface of head and cheek cycloid, rest ctenoid. No distinct mucigerous system above eye, and no supraciliary scales. Several rows of papillae downward from eye, 2 others cross cheek horizontally, other series above and behind preopercular edge and beneath mandible.

D. VI - 9, first dorsal rounded, third spine not reaching second dorsal when depressed, soft dorsal graduated higher posteriorly; A. 8, like second dorsal; caudal broadly rounded; pectoral rays 16, fin rounded, reaches middle of interdorsal space; ventral rays I, 5, fins widely separated, reach over 2/3 to vent. Anal papilla large, subquadrate, hind edges fimbriate.

Dark brown above, light below. Sides with dark longitudinal stripes between each row of scales, and many scales with pale median spot. Membranes of vertical fins dark between rays, on second dorsal and caudal numerous distinct yellowish ocelli in irregular rows. Similar ocelli on first dorsal, none on anal. Edge of second dorsal, and upper and lower caudal borders light, and anal broadly edged. Ventrals dusky, edges paler.

Length 43 to 190 mm. (Mc Culloch and Ogilby.)

North Australia, Queensland.

Ophiocara macrolepidotus (Bloch)

Sciaena macrolepidota BLOCH, Naturg. Ausland. Fische, vol. 6, p. 40, pl. 298, 1792 (type locality, East Indies). - FORSTER, Fauna Indica, p. 15, 1795. - SCHNEIDER, Syst. Ichth. Bloch, p. 80, 1801 (India). - SHAW and NODDER, Nat. Miscellany, vol. 24, pl. 1042, 1812 (Indian Seas).

Cheilodipterus macrolepidotus LACEPÈDE, Hist. Nat. Poiss., vol. 3, pp. 540, 549, 1802 (les Indies).

Eleotris macrolepidota GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 111, 1861 (compiled). - DAY, Fishes of India, pt. 2, p. 310, 1876. - SCHMELTZ, Cat. Mus. Godeffroy, No. 7, p. 47, 1879 (Pelew Islands). - GÜNTHER, Rep. Voy. Challenger, vol. 1, pt. 6, p. 33, 1880 (Mary R., Queensland), p. 35 (Ovalu, Fiji). - PÖHL, Cat. Mus. Godeffroy, No. 9, p. 33, 1884 (Pelew Islands).- DAY, Fishes of India, Suppl., p. 794, 1888; Fauna of British India, Fishes, vol. 2, p. 289, 1889. - STEINDACHNER, Abhandl. Senckenberg. Gesell., vol. 25, p. 431, 1900 (Soah Konoroh, Oba R., Kau R., Tobelo R., Halmaheira; Minahua; Lake Tondano, Celebes).

Eleotris macrolepidotus GUNTHER, Journ. Mus. Godeffroy, vol. 6, pt. 11,

p. 186, 1877 (Andamans, East Indies, North Australia, Pelew Islands, Fiji, New Hebrides). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 7, p. 361, 1882 (New Guinea). - WEBER, Zool. Forschr. Austral. Semon, vol. 5, p. 270, 1895 (Burnett R., Queensland). - OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 754, Nov, 25, 1896 (reference).

Ophiocara macrolepidota JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 384, 1905 (1906) (reference). - MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 279, July 14, 1919 (reference).

Hypseleotris macrolepidotus JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 385, 1905 (1906) (reference).

Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 170, July 7, 1925 (reference)

Ophiocara macrolepidotus FOWLER, Mem. Bishop Mus., vol. 10 , p. 390, 1928 (Fiji; Kusai); vol. 11, No. 5, p. 360, 1931 (reference); vol. 11, No. 6, p. 441, 1934 (reference); List/(Malaya Fishes), p. 209, 1838 (Malaya).

Eleotris porocephala VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (178) 237, 1837 (type locality, Seychelles; New Ireland). - CANTOR, Journ. Asiatic Soc. Bengal, vol. 18, p. 2, p. 1849 (1850) (Penang). - WEBER, Nova Guinea, vol. 9, pt. 4, p. 593, 1913 (Kajo Bay in West Humboldt Bay).

Eleotris porocephalus BLEEKER, Nat. Tyds. Ned. Indië, vol. 5, p. (319, 320) 344, 1853 (Amboina); vol. 6, p. 458, 1854 (Amboina); vol. 11,

p. 487, 1856 (Ceram); vol. 12, p. 215, 1856 (Nias); Act. Soc. Sci. Ind. Neerl., vol. 1, No. 3, p. 5, 1856 (Manado); vol. 1, No. 5, p. 6, 1856 (Amboina); vol. 2, No. 7, p. 6, 1857 (Amboina); Nat. Tyds. Ned. Indie, vol. 20, pp. 237, 450, 1859-60 (Singapore); Act. Soc. Sci. Ind. Neerl. (Acht. Sumatra), vol. 8, p. 40, Feb. Aug. 1859 (Priaman, Sumatra); vol. 8 (Celebes), p. 44, 1860 (Celebes); Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 57, 1861 (Singapore), p. 77 (Pinang). - PETERS, Monatsb. Akad. Wiss. Berlin, p. 268, 1868 (Luzon). - SCHMELTZ, Cat. Mus. Godeffroy, No. 4, p. 19, 1869 (Kanathia). - GÜNTHER, Journ. Mus. Godeffroy, vol. 6, pt. 11, p. 185, pl. 112, fig. a, 1877 (Carolines, Pelew Islands, Vanicolo, New Ireland). - DAY, Fishes of India, pt. 3, p. 312, pl. 167, fig. 1, 1877 (Andamans). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 8, p. 269, 1883 (Normanby Island fresh water, New Guinea). - RAMSAY and OGILBY, Proc. Linn. Soc. New South Wales, vol. 1, ser. 2, p. 8, 1886 (Strickland R., New Guinea). - DAY, Fishes of India, Suppl., p. 795, 1888; Fauna of British India, Fishes, vol. 2, p. 289, fig. 98, 1889. - PERUGIA, Ann. Mus. Civ. Stor. Nat. Genova, vol. 34, p. 547, 1894 (Haveri, Horoka District, 700 meters, New Guinea). - OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 755, Nov. 25, 1896 (reference). - SEALE and BEAN, Proc.

U.S. Nat. Mus., vol. 33, p. 248, 1907 (1908) (Mindanao). - REGAN, Trans. Linn. Soc. London, ser. 2, vol. 12, p. 202, 1907 (1908) (Praslin). - WEBER and BEAUFORT, Nova Caledonia, Sarasin and Roux, vol. 2, pt. 1, pp. 32, 41, 1915 (Oubatche; Banks Island).

Eleotris (Ophiocara) porocephalus Weber, Siboga Exped., vol. 57, Fische, p. 447, 1913 (Salibabu Island; Hoch Kei).

Ophiocara porocephalus BLEEKER, Nat. Tyds. Ned. Indië, vol. 20, pp. 237, 450, 1859-60 (Singapore); Verslag. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 30, 1877 (Sumatra, Nias, Pinang, Singapore, Java, Celebes, Amboina, Ceram). - Kendall and Goldsborough, Mem. Mus. Comp. Zool., vol. 26, p. 316, 1911 (Kusaie, Carolines). - SMEDLEY, Journ. Malay Br. Roy. Asiatic Soc., vol. 6, pt. 3, p. 65, Aug. 1928 (Tioman, Singapore). - HERRE, Journ. Pan-Pac. Res. Inst., vol. 6, No. 4, p. 13, Oct.-Dec. 1931 (New Hebrides fresh water).

Ophiocara porocephala FOWLER, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 550, June 10, 1904 (Padang, Sumatra); Proc. Acad. Nat. Sci. Philadelphia, p. 510, Aug. 16, 1905 (Baram, Borneo). - JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 384, 1905 (1906), (reference). - JORDAN and RICHARDSON, Bull. Bur. Fisher., vol. 27, p. 274, 1908 (Calayan; Mindoro); Philippine Journ. Sci., p. 46, 1910 (reference). - HERRE, Gobies

of Philippines, p. 69, pl. 5, fig. 3, 1927 (Bangui; Abulug; Baguey R.; Obando; Polillo; San Miguel Bay; Aringay R.; Naganahan River; Puerto Galera; Bintoan; Langbuan River; Tablas; Dumangas; Iloilo; Leganes; Villa; Navalas; Catarman; Taytay; Balabac; Buan Island; Bungan; Davao). - WHITLEY, Journ. Pan-Pac. Res. Inst., vol. 3, No. 1, p. 13, Jan.-March 1928 (Santa Cruz Islands). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, vol. 83, p. 448, 1931 (Pulo Ubïn). - HERRE, Fishes Herre 1931 Philippine Exped., p. 81, 1934 (Laguna de Bay; Dumaguete; La. Paz). - SUVATTI, Index Fish. Siam, p. 150, 1936 (Ko Chang; Yamu; Canthaburi River; Songkhla; Paknam Wen). - ROXAS and MARTIN, Depart. Agric. Comm., Manila, Tech. Bull. 6, p. 221, 1937 (reference).

Eleotris ophicephalus (KUHL and VAN HASSELT) VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (180) 239, 1837 (type locality, Java). - BLEEKER, Nat. Geneesk. Arch. Ned. Ind., vol. 2, p. 513, 1845; Verh. Batavia. Genoot. (Blenn. Gob.) , vol. 22, p. 22, 1849 (Batavia; Tjilatjap). - CANTOR, Journ. Asiatic. Soc. Bengal, vol. 18, pt. 2, p. 1178, 1849 (1850) (Penang). - BLEEKER, Nat. Tyds. Ned. Indië, vol. 3, p. 741, 1852 (Kema, Celebes); vol. 6, p. 458, 1854 (Amboina); vol. 11, p. 253, 1856 (Laboeha, Batjan); p. 385 (Kajeli, Buru); Act. Soc. Sci. Ind. Neerl., vol. 1, No. 3, pp. 8,9, 1856

(Macassar); vol. 1, No. 5, p. 6, 1856 (Amboina); vol. 2, No. 7, p. 6, 1857 (Amboina); Nat. Tyds. Ned. Indië, vol. 13, p. 57, 1857 (Kojeli, Buru), p. 284 (Tjirutjup, Biliton); Act. Soc. Sci. Ind. Neerl., vol. 3, No. 9, p. 4, 1857-58 (Trussan, Sumatra); Nat. Tyds. Ned. Indie, vol. 15, p. 224, 1858 (Biliton); vol. 20, p. 206, 1859-60 (Boleling, Bali), pp. 216, 450 (Singapore); Act. Soc. Sci. Ind. Neerl. (Acht. Sumatra), vol. 8, p. 40, 1860 (Sumatra); (Celebes) vol. 8, p. 44, 1860 (Celebes); Verslag. Kon. Akad. Wet. Amsterdam, vol. 12, p. 57, 1861 (Singapore), p. 77 (Pinang); Verslag, Kon. Akad. Wet. Amsterdam, vol. 14, p. 111, 1862 (Batjan); Ned. Tyds. Dierk., vol. 2, p. 150, 1865 (Bouro), p. 192 (Ceram), p. 293 (Amboina). - DAY, Proc. Zool. Soc. London, p. 694, 1870 ( ); Fishes of India, pt. 3, p. 312, pl. 67, fig. 2, 1877. - DUNCKER, Mitteil. Naturh. Mus. Hamburg, vol. 21, p. 61, 1903 (1904) (reference). - Pietschman, Nassau. Ver. Nat. Jahrb. Weisbaden, pt. 66, p. 198, 1913 (Kaiser Wilhelm Hafen, New Guinea). - GILCHRIST and THOMPSON, Ann. Durban Mus., vol. 1, pt. 4, p. 401, 1917 (reference). - Barnard, Ann. South African Mus., vol. 21, p. 811, pl. 32, fig. 6 (copied), Oct. 1927 (Zululand; East Africa). - FOWLER, Mem. Bishop Mus., vol. 10, p. 390, 1928 (Kusai, Carolines).

Eleotris ophiocephalus BLEEKER, Act. Soc. Sci. Ind. Neerl., vol. 3,

No. 9, p. 2, 1857-58 (Padang, Sumatra); - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 107, 1861 (Pinang; Moluccas; Amboyna; Borneo; Philippines), p. 78. Ned. Tyds. Dierk., vol. 4, p. 128, 1873 (China); Arch. Néerl. Sci. Nat. Harlem, vol. 9, p. 303, 1874; Rech. Faune Madagascar, Pollen et Van Dam, pt. 4, p. 78, 1875; Verh. Kon. Akad. Wet. Amsterdam, ser. 2, vol. 11, p. 28, 1877 (Sumatra; Pinang; Singapore; Biliton; Java; Madura; Bali; Borneo; Celebes; Batjan; Buru; Amboina; Ceram; Philippines; New Guinea). - PETERS, Monatsb. Akad. Wiss. Berlin, p. 268, 1868 ( ). - BLEEKER, KLUNZINGERI, Sitzs. Ber. Akad. Wiss. Wien, vol. 80, pt. 1, p. 384, 1879 (1880) (Port Denison; Port Darwin). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (Singapore). - ELERA, Cat. Fauna Filipinas, vol. 1, p. 523, 1895 (Luzon, Manila, Rio Mumary, Antipolo). - STEINDACHNER, Abhandl. Senckenberg. Gessell., vol. 25, p. 432, 1900 (Oba River, Kau River, Halmaheira; Batjan; Ternate). - BOULENGER, Cat. Fresh Water Fish.Africa, vol. 4, p. 15, 1916 (Zanzibar; Mozambique; Seychelles; Comoro Is.). - FOWLER, Mem. Bishop Mus., vol. 11, No. 6, p. 441, 1934 (Fiji; Santo, Normanby I. in fresh water); ~~Data~~ List Fish. Malaya, p. 210, 1937 (reference).

Ophiocara ophiocephalus Giltay, Mém. Mus. Roy. Hist. Nat. Belg., Hors sér. vol. 5, fasc. 3, p. 91, April 30, 1933 (Sanfuit, Bali).

Eleotris tumifrons VALENCIENNES, Hist. Nat. Poiss., vol. 12, p.(181) 241, 1837 (type locality, "des Indes"). - DAY, Fishes of India, Suppl., p.

795, 1888; Fauna of British India, Fishes, vol. 2, p. 292, 1889. - Ogilby, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 755, Nov. 25, 1896 (reference)

Eleotris margaritacea VALENCIENNES, op. cit., p. (181) 240, 1837 (type locality, Vanicolo).

Eleotris viridis BLEEKER, Verhand, Batavia. Genoot. (Blenn. Gob.), vol. 22, p. 22, 1849 (type locality, Madura Straits near Surabaya and Kammal); (Madura) vol. 22, p. 5, 1849 (Kammal); (Midd-Oost. Java) vol. 23, p. 9, 1859.

Eleotris porocephaloides BLEEKER, Nat. Tyds. Ned. Indië, vol. 5, p. 511, 1853 (type locality, Priaman, Sumatra); Act. Soc. Sci. Ind. Neerl. (Acht. Sumatra), vol. 8, p. 40, 1860 (Sumatra); (Celebes) vol. 8, p. 44, 1860 (Celebes). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 109, 1861 (copied).- SCHMELTZ, Cat. Mus. Godeffroy, No. 4, p. 19, 1869 (Kanathia); No. 7, p. 47, 1879 (Viti Islands). - KLUNZINGER, Sitzs. Ber. Akad. Wiss. Wien, vol. 80, pt. 1, p. 384, 1879 (Australia). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (Nagasaki). - OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, pt. 4, p. 755, Nov. 25, 1896 (reference).

Eleotris cantoris GUNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 108, 1861 (type locality, Penang). - BLEEKER, Ned. Tyds. Dierk., vol. 2, p. 192, 1865 (Ceram), p. 364 (Amboina). - KNER, Sitzs. Ber. Akad. Wiss. Wien, vol. 57, p. 328, 1868 (Kanathia, Fiji). - SCHMELTZ, Cat. Mus. Godeffroy, No. 4, p. 19, 1869 (Kanathia); No. 7, p. 47, 1879 (Viti Islands). - KÁROLI, Termesz. Füzetek, Budapest, vol. 5, p. 167, 1881 (1882) (Sarawak). - PÖHL, Cat. Mus. Godeffroy, No. 9, p. 33, 1884 (Kanathia). - DUNCKER, Nat. Mus. Hamburg, Mitteil, vol. 21, p. 161, 1903 (1904) (reference).

Ophiocara cantoris JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, p. 384, 1905 (reference).

Eleotris macrocephalus GÜNTHER, Journ. Mus. Godeffroy, vol. 6, pt. 11, pl. 112, figs. B, B', B.", 1877. (on Eleotris macrolepidotus GÜNTHER)

Depth 4 4/5; head 2 3/4, width 1 3/5. Snout 3 1/2 in head from snout tip; eye 6 1/3, 1 2/3 in snout, 2 1/6 in interorbital; maxillary reaches 1/2 in eye, length 2 2/5 in head from snout tip; teeth villiform, in rather broad bands in jaws, none on palate; tongue smooth, obtusely rounded in front; interorbital 3. Gill rakers 4+11, lanceolate, equal gill filaments or 2 1/3 in eye.

Scales 32+11 in median lateral series; 12 transversely between second dorsal and anal origins; 22 predorsal. Muzzle naked, rest of head scaled. Cheek with 2 horizontal rows of minute pores and 2 short postocular rows; scales on lower cheek small. Caudal and paired fins with small scales crowded basally. Scales with 17 to 29 basal radiating striae; apical denticles 110 to 112; circuli fine.

D. VI--I, 8, I, second spine 1 9/10 in total head length, eighth ray 1 2/5; A. I, 7, I, seventh ray 1 2/3; caudal 1 1/10, rounded behind; least depth of caudal peduncle 2 2/5; pectoral 1 2/5; ventral 1 2/5.

Deep olive brown, little paler or more brownish on belly and under surface of head. Sides with dark or neutral black spots scattered at bases of some scales. Dorsals and caudal deep vandyke brown; soft dorsal with upper edge pale to whitish and membranes of fin with fine scattered neutral dusky spots. Caudal finely spotted with dusky. Anal like soft dorsal. Paired fins dull brown. Iris brownish.

East Africa, Comoro Islands,
Mozambique, Zululand,
Seychelles, India, Andamans,
Malaya, East Indies,
Philippines, Siam, China,
Japan, Queensland, Northern
Territory, Melanesia, Micronesia,
Polynesia.

Gignimentum penicillum Whitley

(Gignimentum penicillum Whitley. Records Austral. Mus., vol. 19, 2.1.1, p. 89, fig. 4, Aug. 2, 1933 (type locality, New Hebrides).

A variable species, sometimes with two pale transverse bands, usually one at front of first dorsal and other on caudal peduncle. The resulting dark intervals may be broken into variable dark blotches. Also pale transverse band at prepectoral region or over pectoral base.

Twenty-nine examples. Chase Head, stream near village, Endeavour Strait, Palawan. December 22, 1908. Length 48 to 115 mm.

Six examples. Iloilo market. June 1, 1908, [641.] Length 98 to 135 mm.

6995 to 6998, 11574 to 11576. Maagnas stream, Lagonay Gulf, Luzon. June 17, 1909. Length 107 to 290 mm. Eight examples. [1671.]

9573. Mahinog River, Camiguin. August 3, 1909. Length 129 to 136 mm. Two examples.

19753. Malampaya River beyond tide water, Palawan. December 26, 1908. Length 176 mm.

11972. Nonucan River, Camp Overton, Mindanao. August 6, 1909. Length 215 mm.

7606, 7607. Pancol, creek at head of tide, Malampaya Island. December 25, 1908. Length 107 to 172 mm. Three examples.

18843. Pasacao River. March 9, 1909. Length 220 mm.

Two examples. Pangauron River, Port Caltom. December 16, 1908. Length 50 to 83 mm.

One example. Port Dupon, brackish river. March 17, 1909. Length 73 mm.

Two examples. Port San Pio V. Camiguin Island. November 11, 1908. Length 99 to 108 mm.

21718 to 21721. Varader Bay, small stream. July 24, 1908. Length 121 to 208 mm. Four examples.

Two examples. Limbe Strait, Celebes, Dutch East Indies. November 12, 1909. Length 27 to 31 mm.

13976 and 13977. Makassar market, Celebes. December 26, 1909. Length 182 to 194 mm.

U.S.N.M., No. 65970. Kusaie, Carolines. Albatross Expedition. Feb. 1908. Length 150 mm. As Ophiocara porocephala.

U.S.N.M., No. 57941. Zamboanga. Dr. E.A. Mearns. Length 41 mm. Pale transverse bar from below front of soft dorsal and another at caudal base.

U.S.N.M., No. 102540. Iloilo, Panay. April 7, 1929. Lieut.H.C. Kellers. Length 139 to 165 mm. Two examples.

U.S.N.M., No. 102611. Iloilo. May 15, 1929. Lieut. H.C. Kellers. Length 150 mm.

U.S.N.M., No. 102613. Iloilo. March 15, 1929. Lieut. H.C. Kellers. Length 165 mm.

U.S.N.M., no. 72185. Calayan, Philippines. R.C. McGregor. Length 192 mm.

U.S.N.M., 82767. Fiji. Wilkes Exploring Expedition. Length 150 to 195 mm. Two e xamples.

U.S.N.M., no. 82924. Fiji. Wilkes Exploring Expedition. Length 169 mm.

U.S.N.M., no. 102, 590. Iloilo, Panay, Philippines. April 16, 1929. Lieut. H.C. Kellers. Length 132 mm.

U.S.N.M., no. 102, 693. Iloilo. March 19, 1929. Lieut. H.C. Kellers. Length 180 mm.

U.S.N.M., no. 28565. Seychelles. Mus. Hist. Nat. Paris. Length 175 mm.

Ophiocara scintillans (Blyth)

Eleotris scintillans BLYTH, Journ. Asiatic Soc. Bengal, vol. , p. 146, 1860 (type locality, Sitang River). - DAY, Proc. Zool. Soc.London, p. 517, 1869 (Andamans); p. 693, 1870 (Andamans). - BLEEKER, Arch. Neérl. Sci. Nat. Harlem, vol. 10, p. 105, 1875 (name). - DAY, Fishes of India, pt. 3, p. 314, pl. 65, fig. 8, 1877 (Akyab; Andamans); Fauna of British India, Fishes, vol. 2, p. 295, 1889.

Depth 3 4/5; head 2 7/8, width 1 9/10. Snout 3 7/8 in head from snout tip; eye 5, 1¼ in snout, 1¼ in interorbital; maxillary reaches ¾ in eye, length 2 1/6 in head from snout tip; mouth begins opposite lower third of eye, lower jaw protruding in front; teeth in jaws villiform, lower outer row somewhat larger; front nostril in short tube; head flattened above anteriorly, interorbital low; no spine on preopercle.

Scales 42 in lateral series; 15 transversely, 34 predorsal. Head scaleless on snout and lower jaw, otherwise with cycloid scales, and on body ctenoid scales.

D. VI - I, 8, third spine 2 1/3 in total head length, first branched ray 2¼, seventh branched ray 1½; A. I, 7, first branched ray 2½, sixth branched ray 1 4/5; caudal 1 1/3, convex behind; least depth of caudal peduncle 2; pectoral 1 2/3, rays 15; ventral rays I, 5, fin 1½ in total head.

Brownish, marbled with darker, scales shot with light spots in certain lights. Both dorsals with about 3 rows of spots, and dark edge having light margin. Anal with dark longitudinal band in outer half, edge light. Caudal dark, with white edge, and sometimes together with anal spotted. Dark ocellus at upper part of caudal base.

Length 92 mm. (Day.)

India. Day says it is very closely allied with Eleotris porocephalus, of which it may be the young.

Genus Gobiomorphus Gill

Gobiomorphus GILL, Proc. Acad. Nat. Sci. Philadelphia, vol. 15, p. 270, 1863. (Type Eleotris gobioides VALENCIENNES, orthotypic.)

Mulgoa OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, p. 740, 1897. (Type Eleotris coxii KREFFT.)

Body partly cylindrical forward, compressed behind. Head wide as deep. Snout obtuse, conic. Mandible projecting. Broad band of villiform teeth in each jaw, without outer row enlarged. Tongue free, rounded in front. Gill openings extend forward below, separated by rather wide isthmus; exposed edge of shoulder girdle forming smooth ridge, pit at lower angle. Gill rakers short, thick, about 9 below. Pseudobranchiae present. Scales moderate, mostly ctenoid but cycloid anteriorly and on abdomen, and extend forward between hind orbital edges. Opercle covered with small scales, and cheek with somewhat rudimentary scales, most numerous in postocular region. Lines of minute papillae across cheek and opercle, around preopercle flange and from each side of snout to above eye. First dorsal rounded, with 6 or 7 spines. Second dorsal short, with 9 to 11 rays. Caudal and pectoral rounded. Ventral with spine and 5 rays, fins completely separated.

Estuaries and fresh waters of New Zealand and New South Wales.

Gobiomorphus coxii (Krefft)

Eleotris coxii KREFFT, Proc. Zool. Soc. London, p. 183, 1864 (type locality, Upper Hawkesbury River, New South Wales). - GÜNTHER, Ann. Mag. Nat. Hist., London, ser. 3, vol. 20, p. 62, 1867( ). - MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, p. 618, 1881.

Mulgoa coxii OGILBY, Proc. Linn. Soc. New South Wales, vol. 21, p. 741, 1897.

Krefftius coxii WAITE, Rec. Austral. Mus., vol. 5, No. 5, p. 283, pl. 36, fig. 1, 1904.

Gobiomorphus coxii MC CULLOCH and OGILBY, Rec. Austral. Mus., vol. 12, No. 10, p. 284, July 14, 1919 (compiled). - MC CULLOCH, Mem. Austral. Mus., vol. 5, pt. 3, p. 363, Nov. 28, 1929 (reference).

Eleotris richardsonii STEINDACHNER, Sitzs. Akad. Wiss. Wien, vol. 53, p. 455, pl. 2, fig. 4, 1866 (type locality, New South Wales).

Gobiomorphus gobioides (not VALENCIENNES) STEINDACHNER, op. cit., vol. 56, pt. 1, p. 326, 1867 (Port Jackson).

Eleotris mastersii MACLEAY, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 622, May 20, 1881 (type locality, Rope's Creek near Sydney, New South Wales).

Depth 5 to 5¾; head 3 2/5 to 3 3/5, width 1½ to 1 7/8. Snout 3 3/5 to 4 in head from snout tip; eye 5 to 5½, 1 1/8 to 1½ in snout, greater than interorbital in young to subequal with age; maxillary reaches opposite eye in young, ¾ to eye with age, length 3 1/5 to 3 2/5 in head from snout tip; teeth finely villiform, in rather broad bands in jaws, uniform; interorbital 4½ to 5½, low, depressed or but slightly convex. Gill rakers 2 + 8, short points, 3 in gill filaments, which 1 2/3 in eye.

Scales 32 or 33 + 4 or 5 in axial lateral series; 12 transversely above anal origin; 15 to 17 predorsal forward opposite hind eye edge. Muzzle, most of cheek and branchiostegal region naked. Small scales on pectoral and caudal bases. Row of minute papillae from over nostrils and eye, giving branch to suprascapula on postocular region, down along lower eye edge to preorbital; 4 or 5 horizontal rows on cheek; row on each lower face of mandibular ramus and up on preopercle flange; vertical row on preopercle and on front of opercle, another on its lower edge. Scales with 22 to 27 basal radiating striae; row of 55 to 88 slender fine apical denticles; circuli fine, coarser apically with age.

D. VI - I, 9, I, third spine 2 1/10 to 2¼ in total head length, third ray 2 to 2 1/8; A. I, 8, I, or I, 9, I, last ray 2 1/3 to 2 3/5; caudal 1 1/5 to 1¼, convex behind; least depth of caudal peduncle 2 1/6 to 2½; pectoral 1¼ to 1 1/3, rays 16 or 17; ventral rays I, 5, fin 1 2/5 to 1½ in total head length. Anal papilla cuneate, truncated depressed flap nearly equal to eye.

Brown, little paler to light on belly and under surfaces. Dark axial lateral band on body from head to caudal base. On back most of scales with dark spot. Iris gray. Fins dull brown, lower ones much paler. First dorsal with 2 longitudinal dark brown bands and second dorsal with 5 narrower ones. Caudal with 7 or 8 transverse dark brown

bands. Anal dark brown submarginally, leaving narrow white lower edge. Pectoral with broad, white, transverse basal band, edged in front and behind with dark brown, usually much darker or more intense brown above on basal band.

New South Wales.

U.S.N.M., No. 48806. Nepean River, New South Wales. J.D. Ogilby.

Length 89 to 125 mm. Five examples.

Gobiomorphus gobioides (Valenciennes)

Eleotris gobioides VALENCIENNES, Hist. Nat. Poiss., vol. 12, p. (186) 247, 1837 (type locality, Bay of Islands, North east New Zealand. - JENYNS, Zool. Voy. Beagle, Fish, p. 98, 1842 (Bay of Islands). - RICHARDSON, Trav. New Zealand, Dieffenbach, p. 212, 1843 (reference); Voy. Erebus and Terror, Fishes, p. 4, pl. 2, figs. 5-6, 1844 (Bay of Islands and adjoining fresh water lakes). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 3, p. 114, 1861 (Bay of Islands; L. Maiken; New Zealand; types of Eleotris basalis). - KNER, Reise Novara, Fische, vol. 2, p. 184, 1865 (Auckland). - STEINDACHNER, Sitzs. Ber. Akad. Wiss. Wien, vol. 56, pt. 1, p. 326, 1867 (Port Jackson).

Gobiomorphus gobioides WAITE, Records Canterbury Mus., vol. 1, No. 1, p. 27, April 25, 1907 (reference).

Eleotris basalis GRAY, Zool. Miscellany, p. 73, 1842 (type locality, Thames River, New Zealand).

Depth 4 to 5 2/3; head 3 to 3 1/8, width 1½. Snout 3 4/5 to 3 7/8 in head from snout tip; eye 5, 1 1/5 to 1¼ in snout, 1 to 1 1/8 in interorbital; maxillary reaches opposite front eye edge, length 2 3/5 to 2¾ in head from snout tip; teeth villiform, slender, conic, in 7 or 8 transverse irregular series, in rather broad bands in jaws, outer row in each slightly enlarged; tongue with end convex around edge; interorbital 5, low, depressed, level. Gill opening extends forward opposite hind preopercle edge. Gill rakers 2 + 9, short low knobs, 1/3 of gill filaments which 1 3/5 in eye.

Scales 37 or 38 + 2 or 3 in axial lateral series; 11 transversely above anal origin; 16 to 18 predorsal forward opposite hind eye edge. Muzzle, front of interorbital, cheek and branchiostegal region naked. Row of fine papillae begins over nostrils, runs in interorbital over eye, down along hind and lower eye edge to middle of maxillary, with 2 close set postocular rows, upper to suprascapula and lower turns vertical on preopercle giving 2 rows on lower edge of cheek, both forward on lower face of mandible; 4 horizontal rows on cheek; 2 vertical close set rows on front of opercle and other short various rows on subopercle. Scales on chest, prepectoral region, and caudal base small. Scales with 19 or 23 radiating basal striae; 80 to 86 uniserial apical denticles, slender, sharp pointed, close set, larger laterally on scales; circuli fine, obsolete apically.

D. VII or VIII - I, 10, I or II, 8, I, fourth spine 2¼ in total head length, fifth branched ray 1¾ to 2 1/8; A. I, 10, I, sixth branched ray 2 to 2 1/10; caudal 1¼, convex behind; least depth of caudal peduncle 2½ to 2 3/5; pectoral 1 1/5 to 1 1/3, rays 20; ventral rays I, 5, fin 1¾ to 1 7/8 in total head length. Anal papilla long, pointed, flap long as eye.

Dark brown, on body each scale with median paler spot. Iris gray. Fin membranes all dark or blackish brown, more or less mottled on soft dorsal and caudal. Pectoral specked with dark brown.

New Zealand, entering fresh water. According to Günther a "white vertical band across the root of the pectoral fin, very distinct in immature specimens, indistinct or absent in adult ones".

U.S.N.M., No. 12599. New Zealand. British Museum. Length 125 to 130 mm. Two examples.

U. S. N. M., no. 83056. New Zealand. Wilkes Exploring Expedition. Length 38 mm.

U. S. N. M., no. 83057. New Zealand. Wilkes Exploring Expedition. Length 36 mm. Poorly preserved, blacks in color.